Presidential Address.

Delivered at the Annual Meeting of the British Association for the Advancement of Science at Toronto, 1897,

BY SIR JOHN EVANS, K.C.B., D.C.L., LL.D., Sc.D.,

CORRESPONDANT DE L'INSTITUT DE FRANCE, ETC.

GENTLEMEN,—Once more has the Dominion of Canada invited the British Association for the Advancement of Science to hold one of the annual meetings of its members within the Canadian territory, and for a second time has the association had the honour and pleasure of accepting the proferred hospitality. In doing so the association has felt that if by any possibility the scientific welfare of a locality is promoted by its being the scene of such a meeting, the claims should be fully recognised of those who, though not dwelling in the British Isles, are still inhabitants of that Greater Britain, whose prosperity is so intimately connected with the fortunes of the mother country. Here, especially, as loyal subjects of one beloved Sovereign, the sixtieth year of whose beneficent reign has just been celebrated with equal rejoicing in all parts of her empire, as speaking the same tongue, and as in most instances connected by the ties of one common parentage, we are bound together in all that can promote our common interests. There is, in all probability, nothing that will tend more to advance those interests than the diffusion of science in all parts of the British Empire, and it is towards this end that the aspirations of the British Association are ever directed, even if in many instances the aim may not be attained.

We are, as already mentioned, indebted to Canada for previous hospitality, but we must also remember that, since the time when we last assembled on this side of the Atlantic, the Dominion has provided the association with a President, Sir William Dawson, whose name is alike well known in Britain and America, and whose reputation is indeed world-wide. We rejoice that we have still among us the pioneer of American geology, who among other discoveries first made us acquainted with the "Air Breathers of the Coal," the terrestrial or more properly arboreal saurians of the New Brunswick and Nova Scotia coal-measures.

On our last visit to Canada, in 1884, our place of assembly was Montreal, a city which is justly proud of her McGill University; to-day we meet within the buildings of another of the universities of this vast Dominion, and in a city the absolute fitness of which for such a purpose must have been foreseen by the native Indian tribes when they gave to a small aggregation of huts upon this spot the name of Toronto —"the place of meetings." Our gathering this year presents a feature of entire novelty and extreme interest, inasmuch as the sister association of the United States of America—still mourning the loss of her illustrious President, Professor Cope—and some other learned societies have made special arrangements to allow of their members coming here to join us. I need hardly say how welcome their presence is, or how gladly we look forward to their taking part in our discussions and aiding us by interchange of thought. To such a meeting the term "international" seems almost misapplied. It may rather be described as a family gathering, in which our relatives more or less distant in blood, but still intimately connected with us by language, literature, and habits of thought, have spontaneously arranged to take part. The domain of science is no doubt one in which the various nations of the civilised world meet upon equal terms, and for which no other passport is required than some evidence of having striven towards the advancement of natural knowledge. Here, on the frontier between the two great English-speaking nations of the world, who is there that does not inwardly feel that anything which conduces to an intimacy between the representatives of two countries, both of them actively engaged in the pursuit of science, may also, through such an intimacy, re-act on the affairs of daily life and aid in preserving those cordial relations that have now for so many years existed between the great American Republic and the British Islands, with which her early foundations are indissolubly connected? The present year has witnessed an interchange of courtesies which has excited the warmest feelings of approbation on both sides of the Atlantic—I mean the return to its proper custodians of one of the most interesting of the relics of the Pilgrim Fathers, the log of the *Mayflower*. May this return, trifling in itself, be of happy augury as testifying to the feelings of mutual regard and esteem which animate the hearts both of the donors and of the recipients.

At our meeting in Montreal the President was an investigator who had already attained to a foremost place in the domains of physics and mathematics, Lord Rayleigh. In his address he dealt mainly with topics such as light, heat, sound, and electricity, on which he is one of our principal authorities. His name and that of his fellow-worker, Professor Ramsay, are now and will in all future ages be associated with the discovery of the new element, argon. Of the ingenious methods by which that discovery was made, and the existence of argon established, this is not the place to speak. One can only hope that the element will not always continue to justify its name by its inertness. The claims of such a leader in physical science as Lord Rayleigh to occupy the presidential chair are self-evident, but possibly those of his successor on this side of the Atlantic are not so immediately apparent. I cannot for a moment pretend to place myself on the same purely scientific level as my distinguished friend and for many years colleague, Lord Rayleigh, and my claims, such as they are, seem to me to rest on entirely different grounds. Whatever little I may have indirectly been able to do in assisting to promote the advancement of science, my principal efforts have now for many years been directed towards attempting to forge those links in the history of the world, and especially of humanity, that connect the past with the present, and towards tracing that course of evolution which plays as important a part in the physical and moral development of man as it does in that of the animal and vegetable creation. It appears to me, therefore, that my election to this important post may, in the main, be regarded as a recognition by this association of the value of archæology as a science. Leaving all personal considerations out of question, I gladly hail this recognition, which is, indeed, in full accordance with the attitude already for many years adopted by the association towards anthropology, one of the most important branches or true archæology.

It is no doubt hard to define the exact limits which are to be assigned to archæology as a science and archæology as a branch of history and *belles lettres*. A distinction is frequently drawn between science on the one hand and knowledge or learning on the other; but translate the terms into Latin and the distinction at once disappears. In illustration of this I need only cite Bacon's great work on the "Advancement of Learning," which was, with his own aid, translated into Latin under the title "*De Augmentis Scientiarum*." It must, however, be acknowledged that a distinction does exist between archæology proper and what, for want of a better word, may be termed antiquarianism. It may be interesting to know the internal arrangements of a dominican convent in the middle ages; to distinguish between the different mouldings characteristic of the principal styles of Gothic architecture; to determine whether an English coin bearing the name of Henry was struck under Henry II., Richard, John, or Henry III; or to decide whether some given edifice was erected in Roman, Saxon, or Norman times. But the power to do this, though involving no small degree of detailed knowledge and some acquaintance with scientific methods, can hardly entitle its possessors to be enrolled among the votaries of science. A familiarity with all the details of Greek and Roman mythology and culture must be regarded as a literary rather than a scientific qualification; and yet when among the records of classical times we come upon traces of manners and customs which have survived for generations, and which seem to throw some rays of light upon the dim past, when history and writing were unknown, we are, I think, approaching the boundaries of scientific archæology.

Every reader of Virgil knows that the Greeks were not merely orators, but that with a pair of compasses they could describe the movements of the heavens and fix the rising of the stars; but when by modern astronomy we can determine the heliacal rising of some well-known star, with which the worship in some given ancient temple is known to have been connected, and can fix its position on the horizon at some particular spot, say, three thousand years ago, and then find that the axis of the temple is directed exactly towards

that spot, we have some trustworthy scientific evidence that the temple in question must have been erected at a date approximately 1100 years B.C. If on or close to the same site we find that more than one temple was erected, each having a different orientation, these variations, following, as they may fairly be presumed to do, the changing position of the rising of the dominant star, will also afford a guide as to the chronological order of the different foundations. The researches of Mr. Penrose seem to show that in certain Greek temples, of which the date of foundation is known from history, the actual orientation corresponds with that theoretically deduced from astronomical data. Sir J. Norman Lockyer has shown that what holds good for Greek temples applies to many of far earlier date in Egypt, though up to the present time hardly a sufficient number of accurate observations have been made to justify us in foreseeing all the instructive results that may be expected to arise from astronomy coming to the aid of archæology. The intimate connexion of archæology with other sciences is in no case so evident as with respect to geology, for when considering subjects such as those I shall presently discuss it is almost impossible to say where the one science ends and the other begins.

By the application of geological methods many archæological questions relating even to subjects on the borders of the historical period have been satisfactorily solved. A careful examination of the limits of the area over which its smaller coins are found has led to the position of many an ancient Greek city being accurately ascertained; while in England it has only been by treating the coins of the Ancient Britons, belonging to a period before the Roman occupation, as if they were actual fossils that the territories under the dominion of the various kings and princes who struck them have been approximately determined. In arranging the chronological sequence of these coins, the evolution of their types—a process almost as remarkable, and certainly as well-defined, as any to be found in nature—has served as an efficient guide. I may venture to add that the results obtained from the study of the morphology of this series of coins were published ten years before the appearance of Darwin's great work on the "Origin of Species." When we come to the consideration of the relics of the early iron and bronze ages the aid of chemistry has of necessity to be invoked. By its means we are able to determine whether the iron of a tool or weapon is of meteoritic or volcanic origin, or has been reduced from iron-ore, in which case considerable knowledge of metallurgy would be involved on the part of those who made it. With bronze antiquities the nature and extent of the alloys combined with the copper may throw light not only on their chronological position, but on the sources whence the copper, tin, and other metals of which they consist were originally derived. I am not aware of there being sufficient differences in the analyses of the native copper from different localities in the region in which we are assembled for Canadian archæologists to fix the sources from which the metal was obtained which was used in the manufacture of the ancient tools and weapons of copper that are occasionally discovered in this part of the globe. Like chemistry, mineralogy, and petrology may be called to the assistance of archæology in determining the nature and source of the rocks of which ancient stone implements are made; and, thanks to researches of the followers of those sciences, the old view that all such implements formed of jade and found in Europe must of necessity have been fashioned from material imported from Asia can no longer be maintained. In one respect the archæologist differs in opinion from the mineralogist—namely, as to the propriety of chipping off fragments from perfect and highly finished specimens for the purpose of submitting them to microscopic examination.

I have hitherto been speaking of the aid that other sciences can afford to archæology when dealing with questions that come almost, if not quite, within the fringe of history, and belong to times when the surface of our earth presented much the same configuration as regards the distribution of land and water and hill and valley as it does at present, and when in all probability the climate was much the same as it now is. When, however, we come to discuss that remote age in which we find the earliest traces that are at present known of man's appearance upon earth the age of geology and palæontology becomes absolutely imperative. The changes in the surface configuration and in the extent of the land, especially in a country like Britain, as well as the modifications of the fauna and flora since those days, have been such that the archæologist pure and simple is incompetent to deal with them, and he must either himself undertake the study of these other sciences or call experts in them to his assistance. The evidence that man had already appeared upon the earth is afforded by stone implements wrought by his hands, and it falls strictly within the province of the archæologist to judge whether given specimens were so wrought or not; it rests with the geologist to determine their stratigraphical or chronological position, while the palæontologist can pronounce upon the age and character of the associated fauna and flora. If left to himself the archæologist seems too prone to build up theories founded upon form alone, irrespective of geological conditions. The geologist, unaccustomed to archæological details, may readily fail to see the difference between the results of the operations of Nature and those of Art, and may be liable to trace the effects of man's handiwork in the chipping, bruising, and wearing which in all ages result from natural forces; but the united labours of the two, checked by those of the palæontologist, cannot do otherwise than lead towards sound conclusions.

It will perhaps be expected of me that I should on the present occasion bring under review the state of our present knowledge with regard to the antiquity of man; and probably no fitter place could be found for the discussion of such a topic than the adopted home of my venerated friend, the late Sir Daniel Wilson, who first introduced the word "prehistoric" into the English language. Some among us may be able to call to mind the excitement, not only among men of science, but among the general public, when, in 1859, the discoveries of M. Boucher de Perthes and Dr. Rigollot in the gravels of the valley of the Somme, at Abbeville and Amiens, were confirmed by the investigations of the late Sir Joseph Prestwich, myself, and others, and the co-existence of man with the extinct animals of the quaternary fauna, such as the mammoth and woolly-haired rhinoceros, was first virtually established. It was at the same time pointed out that these relics belonged to a far earlier date than the ordinary stone weapons found upon the surface, which usually showed signs of grinding or polishing, and that, in fact, there were two stone ages in Britain. To these the terms "neolithic" and "palæolithic" were subsequently applied by Sir John Lubbock. The excitement was not less when, at the meeting of this association at Aberdeen in the autumn of that year, Sir Charles Lyell, in the presence of the Prince Consort, called attention to the discoveries in the valley of the Somme, the site of which he had himself visited, and to the vast lapse of time indicated by the position of the implements in drift deposits a hundred feet above the existing river. The conclusions forced upon those who examined the facts on the spot did not receive immediate acceptance by all who were interested in geology and archæology, and fierce were the controversies on the subject that were carried on both in the newspapers and before various learned societies. It is at the same time instructive and amusing to look back on the discussions of those days. While one class of objectors accounted for the configuration of the flint implements from the gravels by some unknown chemical agency, by the violent and continued gyratory action of water, by fracture resulting from pressure, by rapid cooling when hot or by rapid heating when cold, or even regarded them as aberrant forms of fossil fishes, there were others who, when compelled to acknowledge that the implements were the work of men's hands, attempted to impugn and set aside the evidence as to the circumstances under which they had been discovered. In doing this they adopted the view that the worked flints had either been introduced into the containing beds at a comparatively recent date, or if they actually formed constituent parts of the gravel then that this was a mere modern alluvium resulting from floods at no very remote period. In the course of a few years the main stream of scientific thought left this controversy behind, though a tendency to cut down the lapse of time necessary for all the changes that have taken place in the configuration of the surface of the earth and in the character of its occupants since the time of the palæolithic gravels still survives in the inmost recesses of the hearts of not a few observers.

In his address to this association at the Bath meeting of 1864 Sir Charles Lyell struck so true a note that I am tempted to reproduce the paragraph to which I refer: "When speculations on the long series of events which occurred in the glacial and post-glacial periods are indulged in, the imagination is apt to take alarm at the immensity of the time required to interpret the monuments of these ages,

all referable to the era of existing species. In order to abridge the number of centuries which would otherwise be indispensable, a disposition is shown by many to magnify the rate of change in prehistoric times by investing the causes which have modified the animate and inanimate world with extraordinary and excessive energy. It is related of a great Irish orator of our day that when he was about to contribute somewhat parsimoniously towards a public charity he was persuaded by a friend to make a more liberal donation. In doing so he apologised for his first apparent want of generosity by saying that his early life had been a constant struggle with scanty means, and that "they who are born to affluence cannot easily imagine how long a time it takes to get the chill of poverty out of one's bones.' In like manner we of the living generation, when called upon to make grants of thousands of centuries in order to explain the events of what is called the modern period, shrink naturally at first from making what seems so lavish an expenditure of past time. Throughout our early education we have been accustomed to such strict economy in all that relates to the chronology of the earth and its inhabitants in remote ages, so fettered have we been by old traditional beliefs, that even when our reason is convinced and we are persuaded that we ought to make more liberal grants of time to the geologist, we feel how hard it is to get the chill of poverty out of our bones." Many, however, have at the present day got over this feeling, and of late years the general tendency of those engaged upon the question of the antiquity of the human race has been in the direction of seeking for evidence by which the existence of man upon the earth could be carried back to a date earlier than that of the quaternary gravels. There is little doubt that such evidence will eventually be forthcoming, but, judging from all probability, it is not in Northern Europe that the cradle of the human race will eventually be discovered, but in some part of the world more favoured by a tropical climate, where abundant means of subsistence could be procured, and where the necessity for warm clothing did not exist. Before entering into speculations on this subject, or attempting to lay down the limits within which we may safely accept recent discoveries as firmly established, it will be well to glance at some of the cases in which implements are stated to have been found under circumstances which raise a presumption of the existence of man in pre-glacial, pliocene, or even miocene times.

Flint implements of ordinary palæolithic type have, for instance, been recorded as found in the eastern counties of England in beds beneath the chalky boulder clay; but on careful examination the geological evidence has not to my mind proved satisfactory, nor has it, I believe, been generally accepted. Moreover, the archæological difficulty that man, at two such remote epochs as the pre-glacial and the post-glacial, even if the term "glacial" be limited to the chalky boulder clay, should have manufactured implements so identical in character that they cannot be distinguished apart, seems to have been entirely ignored. Within the last few months we have had the report of worked flints having been discovered in the late pliocene forest bed of Norfolk, but in that instance the signs of human workmanship upon the flints are by no means apparent to all observers. But such an antiquity as that of the forest bed is as nothing when compared with that which would be implied by the discoveries of the work of men's hands in the pliocene and miocene beds of England, France, Italy, and Portugal, which have been accepted by some geologists. There is one feature in these cases which has hardly received due attention, and that is the isolated character of the reputed discoveries. Had man, for instance, been present in Britain during the crag period, it would be strange indeed if the sole traces of his existence that he left were a perforated tooth of a large shark, the sawn rib of a manatee, and a beaming full face carved on the shell of a pectunculus!

In an address to the Anthropological Section at the Leeds meeting of this association in 1890 I dealt somewhat fully with these supposed discoveries of the remains of human art in beds of tertiary date; and I need not here go further into the question. Suffice it to say that I see no reason why the verdict of "not proven" at which I then arrived should be reversed. In the case of a more recent discovery in Upper Burma in beds at first pronounced to be upper miocene, but subsequently "definitely ascertained to be pliocene," some of the flints are of purely natural and not artificial origin, so that two questions arise: first, Were the fossil remains associated with the worked flints or with those of natural forms? and second, Were they actually found in the bed to which they have been assigned, or did they merely lie together on the surface? Even the *Pithecanthropus erectus* of Dr. Eugène Dubois from Java meets with some incredulous objectors from both the physiological and the geological sides. From the point of view of the latter the difficulty lies in determining the exact age of what are apparently alluvial beds in the bottom of a river valley.

When we return to palæolithic man it is satisfactory to feel that we are treading on comparatively secure ground, and that the discoveries of the last forty years in Britain alone enable us to a great extent to reconstitute his history. We may not know the exact geological period when first he settled in the British area, but we have good evidence that he occupied it at a time when the configuration of the surface was entirely different from what it is at present, when the river valleys had not been cut down to anything like their existing depth, when the fauna of the country was of a totally different character from that of the present day, when the extension of the southern part of the island seaward was in places such that the land was continuous with that of the continent, and when in all probability a far more rainy climate prevailed. We have proofs of the occupation of the country by man during the long lapse of time that was necessary for the excavation of the river valleys. We have found the old floors on which his habitations were fixed, we have been able to trace him at work on the manufacture of flint instruments, and by building up the one upon the other the flakes struck off by the primæval workman in those remote times we have been able to reconstruct the blocks of flint which served as his material. That the duration of the palæolithic period must have extented over an almost incredible length of time is sufficiently proved by the fact that valleys, some miles in width and of a depth of from 100 to 150 ft., have been eroded since the deposit of the earliest implement-bearing beds. Nor is the apparent duration of this period diminished by the consideration that the floods which hollowed out the valleys were not in all probability of such frequent occurrence as to teach palæolithic man by experience the danger of settling too near to the streams, for had he kept to the higher slopes of the valley there would have been but little chance of his implements having so constantly formed constituent parts of the gravels deposited by the floods.

The examination of British cave-deposits affords corroborative evidence of this extended duration of the palæolithic period. In Kent's Cavern at Torquay, for instance, we find in the lowest deposit, the breccia below the red cave-earth, implements of flint and chert corresponding in all respects with those of the high level and most ancient river gravels. In the cave-earth these are scarcer, though implements occur which also have their analogues in the river deposits; but, what is more remarkable, harpoons of reindeer's horn and needles of bone are present, identical in form and character with those of the caverns of the reindeer period in the South of France, and suggestive of some bond of union or identity of descent between the early troglodytes, whose habitations were geographically so widely separated the one from the other.

In a cavern at Creswell Crags, on the confines of Derbyshire and Nottinghamshire, a bone has, moreover, been found engraved with a representation of parts of a horse in precisely the same style as the engraved bones of the French caves. It is uncertain whether any of the river-drift specimens belong to so late a date as these artistic cavern remains; but the greatly superior antiquity of even these to any neolithic relics is testified by the thick layer of stalagmite which had been deposited in Kent's Cavern before its occupation by men of the neolithic and bronze periods. Towards the close of the period covered by the human occupation of the French caves there seems to have been a dwindling in the number of the larger animals constituting the quaternary fauna, whereas their remains are present in abundance in the lower and therefore more recent of the valley gravels. This circumstance may afford an argument in favour of regarding the period represented by the later French caves as a continuation of that during which the old river gravels were deposited, and yet the great change in the fauna that has taken place since the latest of the cave deposits included in the palæolithic period is indicative of an immense lapse of time. How much greater must have been the time required for the more

conspicuous change between the old quaternary fauna of the river gravels and that characteristic of the neolithic period. As has been pointed out by Professor Boyd Dawkins, only thirty-one out of the forty-eight well-ascertained species living in the post-glacial or river-drift period survived into prehistoric or neolithic times. We have not, indeed, any means at command for estimating the number of centuries which such an important change indicates; but when we remember that the date of the commencement of the neolithic or surface stone period is still shrouded in the mist of a dim antiquity, and that prior to that commencement the river-drift period had long come to an end; and when we further take into account the almost inconceivable ages that even under the most favourable conditions the excavation of wide and deep valleys by river action implies, the remoteness of the date at which the palæolithic period had its beginning almost transcends our powers of imagination. We find distinct traces of river action from 100 to 200 feet above the level of existing streams and rivers, and sometimes at a great distance from them; we observe old fresh-water deposits on the slopes of the valleys several miles in width; we find that long and lofty escarpments of rock have receded unknown distances since their summits were first occupied by palæolithic man; we see that the whole side of a wide river valley has been carried away by an invasion of the sea, which attacked and removed a barrier of chalk cliffs from 400 to 600 feet in height; we find that what was formerly an inland river has been widened out into an arm of the sea, now the highway of our fleets, and that gravels which were originally deposited in the bed of some ancient river now cap isolated and lofty hills.

And yet, remote as the date of the first known occupation of Britain by man may be, it belongs to what, geologically speaking, must be regarded as a quite recent period, for we are now in a position to fix with some degree of accuracy its place on the geological scale. Thanks to investigations ably carried out at Hoxne, in Suffolk, and at Hitchin, in Hertfordshire, by Mr. Clement Reid, under the auspices of this association and of the Royal Society, we know that the implement-bearing beds at those places undoubtedly belong to a time subsequent to the deposit of the great chalky boulder clay of the eastern counties of England. It is, of course, self-evident that this vast deposit, in whatever manner it may have been formed, could not for centuries after its deposition was complete have presented a surface inhabitable by man. Moreover, at a distance but little farther north beds exist which also, though at a somewhat later date, were apparently formed under glacial conditions. At Hoxne the interval between the deposit of the boulder clay and of the implement-bearing beds is distinctly proved to have witnessed at least two noteworthy changes in climate. The beds immediately reposing on the clay are characterised by the presence of alder in abundance, of hazel and yew, as well as by that of numerous flowering plants indicative of a temperate climate very different from that under which the boulder clay itself was formed. Above these beds, characterised by temperate plants, comes a thick and more recent series of strata, in which leaves of the dwarf Arctic willow and birch abound, and which were in all probability deposited under conditions like those of the cold regions of Siberia and North America. At a higher level and of more recent date than these—from which they are entirely distinct—are the beds containing palæolithic implements, formed in all probability under conditions not essentially different from those of the present day. However this may be, we have now conclusive evidence that the palæolithic implements are, in the eastern counties of England, of a date long posterior to that of the great chalky boulder clay.

It may be said, and said truly, that the implements at Hoxne cannot be shown to belong to the beginning rather than to some later stage of the palæolithic period. The changes, however, that have taken place at Hoxne in the surface configuration of the country prove that the beds containing the implements cannot belong to the close of that period. It must, moreover, be remembered that in what are probably the earliest of the palæolithic deposits of the eastern counties, those at the highest level, near Brandon in Norfolk, where the gravels contain the largest proportion of pebbles derived from glacial beds, some of the implements themselves have been manufactured from materials not native to the spot, but brought from a distance, and derived in all probability either from the boulder clay or from some of the beds associated with it. We must, however, take a wider view of the whole question, for it must not for a moment be supposed that there are the slightest grounds for believing that the civilisation, such as it was, of the palæolithic period originated in the British Isles. We find in other countries implements so identical in form and character with British specimens that they might have been manufactured by the same hands. These occur over large areas in France under similar conditions to those that prevail in England. The same forms have been discovered in the ancient river gravels of Italy, Spain, and Portugal. Some few have been recorded from the north of Africa, and analogous types occur in considerable numbers in the south of that continent. On the banks of the Nile, many hundreds of feet above its present level, implements of the European types have been discovered; while in Somaliland, in an ancient river valley at a great elevation above the sea, Mr. Seton-Karr has collected a large number of implements formed of flint and quartzite, which, judging from their form and character, might have been dug out of the drift deposits of the Somme or the Seine, the Thames or the ancient Solent. In the valley of the Euphrates implements of the same kind have also been found, and again farther east in the lateritic deposits of Southern India they have been obtained in considerable numbers. It is not a little remarkable, and is at the same time highly suggestive, that a form of implement almost peculiar to Madras reappears among implements from the very ancient gravels of the Manzanares at Madrid. In the case of the African discoveries we have as yet no definite palæontological evidence by which to fix their antiquity, but in the Narbadá Valley of Western India palæolithic implements of quartzite seem to be associated with a local fauna of pleistocene age, comprising, like that of Europe, the elephant, hippopotamus, ox, and other mammals of species now extinct. A correlation of the two faunas with a view of ascertaining their chronological relations is beset with many difficulties, but there seems reason for accepting this Indian pleistocene fauna as in some degree more ancient than the European.

Is this not a case in which the imagination may be fairly invoked in aid of science? May we not from these data attempt in some degree to build up and reconstruct the early history of the human family? There, in Eastern Asia, in a tropical climate, with the means of subsistence readily at hand, may we not picture to ourselves our earliest ancestors gradually developing from a lowly origin, acquiring a taste for hunting, if not indeed being driven to protect themselves from the beasts around them, and evolving the more complicated forms of tools or weapons from the simpler flakes which had previously served them as knives? May we not imagine that when once the stage of civilisation denoted by these palæolithic implements had been reached the game for the hunter became scarcer and that his life in consequence assumed a more nomad character? Then, and possibly not till then, may a series of migrations to "fresh woods and pastures new" not unnaturally have ensued, and these following the usual course of "westward towards the setting sun" might eventually lead to a palæolithic population finding its way to the extreme borders of Western Europe, where we find such numerous traces of its presence. How long a term of years may be involved in such a migration it is impossible to say, but that such a migration took place the phenomena seem to justify us in believing. It can hardly be supposed that the process that I have shadowed forth was reversed, and that man, having originated in north-western Europe, in a cold climate where clothing was necessary and food scarce, subsequently migrated eastward to India and southward to the Cape of Good Hope? As yet our records of discoveries in India and Eastern Asia are but scanty; but it is there that the traces of the cradle of the human race are, in my opinion, to be sought, and possibly future discoveries may place upon a more solid foundation the visionary structure that I have ventured to erect.

It may be thought that my hypothesis does not do justice to what Sir Thomas Browne has so happily termed "that great antiquity, America." I am, however, not here immediately concerned with the important neolithic remains of all kinds with which this great continent abounds. I am now confining myself to the question of palæolithic man and his origin, and in considering it I am not unmindful of the Trenton implements, though I must content myself by saying that the "turtle-back" form is essentially different from the majority of those on the wide dissemination of which I have been speculating, and, moreover, as many here

present are aware, the circumstances of the finding of these American implements are still under careful discussion. Leaving them out of the question for the present, it may be thought worth while to carry our speculations rather further, and to consider the relations in time between the palæolithic and the neolithic periods. We have seen that the stage in human civilisation denoted by the use of the ordinary forms of palæolithic implements must have extended over a vast period of time if we have to allow for the migration of the primæval hunters from their original home, wherever it may have been in Asia or Africa, to the west of Europe, including Britain. We have seen that during this migration the forms of the weapons and tools made from silicious stones had become, as it were, stereotyped, and, further, that during the subsequent extended period implied by the erosion of the valleys the modifications in the form of the implements and the changes in the fauna associated with the men who used them were but slight. At the close of the period during which the valleys were being eroded comes that represented by the latest occupation of the caves by palæolithic man, when both in Britain and in the south of France the reindeer was abundant; but among the stone weapons and implements of that long troglodytic phase of man's history not a single example with the edge sharpened by grinding has as yet been found. All that can safely be said is that the larger implements as well as the larger mammals had become scarcer, that greater power in chipping flint had been attained, that the arts of the engraver and the sculptor had considerably developed, and that the use of the bow had probably been discovered. Directly we encounter the relics of the neolithic period, often, in the case of the caves lately mentioned, separated from the earlier remains by a thick layer of underlying stalagmite, we find flint hatchets polished at the edge and on the surface, cutting at the broad and not at the narrow end, and other forms of implements associated with a fauna in all essential respects identical with that of the present day.

Were the makers of these polished weapons the direct descendants of palæolithic ancestors whose occupation of the country was continuous from the days of the old river gravels? or had these long since died out, so that after Western Europe had for ages remained uninhabited it was re-peopled in neolithic times by the immigration of some new race of men? Was there, in fact, a "great gulf fixed" between the two occupations? or was there in Europe a gradual transition from the one stage of culture to the other? It has been said that "what song the syrens sang, or what name Achilles assumed when he hid himself among women, though puzzling questions, are not beyond all conjecture"; and though the questions now proposed may come under the same category, and must await the discovery of many more essential facts before they receive definite and satisfactory answers, we may, I think, throw some light upon them if we venture to take a few steps upon the seductive if insecure paths of conjecture. So far as I know we have as yet no trustworthy evidence of any transition from the one age to the other, and the gulf between them remains practically unbridged. We can, indeed, hardly name the part of the world in which to seek for the cradle of neolithic civilisation, though we know that traces of what appear to have been a stone-using people have been discovered in Egypt, and that what must be among the latest of the relics of their industry have been assigned to a date some 3500 to 4000 years before our era. The men of that time had attained to the highest degree of skill in working flint that has ever been reached. Their beautifully made knives and spearheads seem indicative of a culminating point reached after long ages of experience; but whence these artists in flint came or who they were is at present absolutely unknown, and their handiworks afford no clue to help us in tracing their origin. Taking a wider survey, we may say that, generally speaking, not only the fauna but the surface configuration of the country were, in Western Europe at all events, much the same at the commencement of the neolithic period as they are at the present day. We have, too, no geological indications to aid us in forming any chronological scale.

The occupation of some of the caves in the south of France seems to have been carried on after the erosion of the neighbouring river valleys had ceased, and so far as our knowledge goes these caves offer evidence of being the latest in time of those occupied by man during the palæolithic period. It seems barely possible that though in the north of Europe there are no distinct signs of such late occupation, yet that in the south man may have lived on, though in diminished numbers; and that in some of the caves, such, for instance, as those in the neighbourhood of Mentone, there may be traces of his existence during the transitional period that connects the palæolithic and neolithic ages. If this were really the case we might expect to find some traces of a dissemination of neolithic culture from a North Italian centre, but I much doubt whether any such traces actually exist. If it had been in that part of the world that the transition took place, how are we to account for the abundance of polished stone hatchets found in Central India? Did neolithic man return eastward by the same route as that by which in remote ages his palæolithic predecessor had migrated westward? Would it not be in defiance of all probability to answer such a question in the affirmative? We have, it must be confessed, nothing of a substantial character to guide us in these speculations; but, pending the advent of evidence to the contrary, we may, I think, provisionally adopt the view that owing to failure of food, climatal changes, or other causes, the occupation of Western Europe by palæolithic man absolutely ceased, and that it was not until after an interval of long duration that Europe was re-peopled by a race of men immigrating from some other part of the globe where the human race had survived, and in course of ages had developed a higher stage of culture than that of palæolithic man.

I have been carried away by the liberty allowed for conjecture into the regions of pure imagination, and must now return to the realms of fact, and one fact on which I desire for a short time to insist is that of the existence at the present day, in close juxtaposition with our own civilisation, of races of men who—at all events but a few generations ago—lived under much the same conditions as did our own neolithic predecessors in Europe. The manners and customs of these primitive tribes and peoples are changing day by day, their languages are becoming obsolete, their myths and traditions are dying out, their ancient processes of manufacture are falling into oblivion, and their numbers are rapidly diminishing, so that it seems inevitable that ere long many of these interesting populations will become absolutely extinct. The admirable Bureau of Ethnology instituted by our neighbours in the United States of America has done much towards preserving a knowledge of the various native races in this vast continent; and here in Canada the annual Archæological Reports presented to the Minister of Education are rendering good service in the same cause. Moreover, the committee of this association appointed to investigate the physical characters, languages, and industrial and social conditions of the north-western tribes of the Dominion of Canada is about to present its twelfth and final report, which, in conjunction with those already presented, will do much towards preserving a knowledge of the habits and languages of those tribes. It is sad to think that Mr. Horatio Hale, whose comprehensive grasp of the bearings of ethnological questions, and whose unremitting labours have so materially conduced to the success of the committee, should be no longer among us. Although this report is said to be final, it is to be hoped that the committee may be able to indicate lines upon which future work in the direction of ethnological and archæological research may be profitably carried on in this part of Her Majesty's dominions. It is, however, lamentable to notice how little is being or has been officially done towards preserving a full record of the habits, beliefs, arts, myths, languages, and physical characteristics of the countless other tribes and nations more or less uncivilised which are comprised within the limits of the British Empire. At the meeting of this association held last year at Liverpool it was resolved by the general committee "that it is of urgent importance to impress upon the Government the necessity of establishing a Bureau of Ethnology for Greater Britain, which, by collecting information with regard to the native races within and on the borders of the empire, will prove of immense value to science and to the Government itself." It has been suggested that such a bureau might with the greatest advantage and with the least outlay and permanent expense be connected either with the British Museum or with the Imperial Institute, and the project has already been submitted for the consideration of the trustees of the former establishment. The existence of an almost unrivalled ethnological collection in the museum, and the presence there of officers already well versed in ethnological research, seem to afford an argument in

favour of the proposed bureau being connected with it. On the other hand, the Imperial Institute was founded with an especial view to its being a centre around which every interest connected with the dependencies of the Empire might gather for information and support. The establishment within the last twelve months of a scientific department within the Institute, with well-appointed laboratories and a highly trained staff, shows how ready are those concerned in its management to undertake any duties that may conduce to the welfare of the outlying parts of the British Empire—a fact of which I believe that Canada is fully aware. The Institute is therefore likely to develop, so far as its scientific department is concerned, into a bureau of advice in all matters scientific and technical, and certainly a Bureau of Ethnology such as that suggested would not be out of place within its walls. Wherever such an institution is to be established, the question of its existence must of necessity rest with Her Majesty's Government and Treasury, inasmuch as without funds, however moderate, the undertaking cannot be carried on. I trust that in considering the question it will always be borne in mind that in the relations between civilised and uncivilised nations and races it is of the first importance that the prejudices, and especially the religious or semi-religious and caste prejudices of the latter should be thoroughly well known to the former. If but a single "little war" could be avoided in consequence of the knowledge acquired and stored up by the Bureau of Ethnology preventing such a misunderstanding as might culminate in warfare, the cost of such an institution would quickly be saved.

I fear that it will be thought that I have dwelt too long on primæval man and his modern representatives, and that I should have taken this opportunity to discuss some more general subject, such as the advances made in the various departments of science since last this association met in Canada. Such a subject would no doubt have afforded an infinity of interesting topics on which to dilate. Spectrum analysis, the origin and nature of celestial bodies, photography, the connexion between heat, light, and electricity, the practical applications of the latter, terrestrial magnetism, the liquefaction and solidification of gases, the behaviour of elements and compounds under the influence of extreme cold, the nature and uses of the Roentgen rays, the advances in bacteriology and in prophylactic medicine, might all have been passed under review, and to many of my audience would have seemed to possess greater claims to attention than the subject that I have chosen. It must, however, be borne in mind that most, if not indeed all, of these topics will be discussed by more competent authorities in the various sections of the association by means of the presidential addresses or otherwise. Nor must it be forgotten that I occupy this position as a representative of archæology, and am therefore justified in bringing before you a subject in which every member of every race of mankind ought to be interested—the antiquity of the human family and the scenes of its infancy.

Others will direct our thoughts in other directions, but the farther we proceed the more clearly shall we realise the connexion and interdependence of all departments of science. Year after year, as meetings of this association take place, we may also foresee that "many shall run to and fro and knowledge shall be increased." Year after year advances will be made in science and in reading that Book of Nature that lies ever open before our eyes; successive stones will be brought for building up that temple of knowledge of which our fathers and we have laboured to lay the foundations. May we not well exclaim with old Robert Recorde: "Oh woorthy temple of Goddes magnificence: Oh throne of glorye and seate of the lorde: thy substance most pure what tonge can describe? thy signes are so wonderous, surmountinge mannes witte, the effects of thy motions so diuers in kinde: so harde for to searche, and worse for to fynde—Thy woorkes are all wonderous, thy cunning unknowen: yet seedes of all knowledge in that booke are sowen—And yet in that boke who rightly can reade, to all secrete knowledge it will him straighte leade."[1]

[1] Preface to Robert Recorde's Castle of Knowledge, 1556.

VACCINATION GRANT.—Dr. John Hamilton, of Burton-on-Trent, has obtained the Government grant for efficient vaccination in the Gresley District, Burton-on-Trent Union, for the tenth time.

An Address

ON THE

RELATIONSHIP OF PHYSIOLOGY, PHARMACOLOGY, PATHOLOGY, AND PRACTICAL MEDICINE.

Delivered at the International Medical Congress at Moscow on Aug. 7th (19th), 1897,

BY T. LAUDER BRUNTON, M.D., D.Sc. EDIN., LL.D. (HON.) ABERD., F.R.C.P. LOND., F.R.S.

GENTLEMEN,—The desire for knowledge which is common to the lower animals and man, savage or civilised, and has induced members of this Congress to come from the ends of the earth in order to gain information must have led primitive man from the earliest times to study the great problems of physiology, the nature of life, of growth, of reproduction, and of death, as well as to notice the connexion of the latter with mechanical injuries, such as the wounds inflicted by clubs and spears or by the teeth and claws of wild beasts. Next to the problems of physiology come those of pharmacology, by which I mean the poisonous or remedial action of various substances—mineral, vegetable, or animal. A knowledge of this subject is found even amongst the lowest savages and is of the greatest use to them, for it enables them, on the one hand, to avoid eating things which may cause discomfort, pain, or death, and, on the other, to obtain food by poisoning waters and thus catching fish, or by poisoning their arrows to kill game which would otherwise escape. Closely associated with the knowledge of the poisonous is that of the curative powers of herbs, and it is possessed by animals as well as man, for cows avoid noxious plants, and dogs will every now and again eat grass apparently as medicine. Primitive peoples use various substances as remedies in disease with more or less success, and one of the most extraordinary points in their practice is that they seem to some extent to have forestalled the newest researches on venins, anti-venins, and organo-therapy, for in Africa the bushmen are accustomed to drink the poison of venomous snakes as a prophylactic against their bite, and the Hausas prevent hydrophobia by killing the mad dog and making the man it has bitten eat its liver. The occurence of death from wounds or poison is intelligible even to a savage, but when illness and death occur independently of these, men naturally attribute them to invisible powers. Thus the Dyaks of Borneo ascribe sickness to wounds from invisible spears wielded by invisible spirits, and during an epidemic of disease in the middle ages the cry often arose that the wells had been poisoned. These crude ideas contain germs of truth, and when we look at Professor Metchnikoff's drawings of a Daphnia attacked by a Monospora we seem to recognise the invisible darts of the Dyaks, while during an epidemic of typhoid fever we have often to acknowledge that our wells have been poisoned by bacilli.

It is impossible to trace the steps by which the crude ideas of savage peoples regarding physiology, pharmacology, and pathology, have grown into definite sciences, or even to indicate the most important landmarks, though we naturally think of the names of Alkmaon, Galen, and Harvey in physiology; of Nicander, Magendie, and Bernard in pharmacology; and of Morgagni, Virchow, and Pasteur in pathology. During this century these three sciences have developed with almost incredible rapidity, a complete knowledge of them is enough to tax severely the most retentive memory, and it is almost impossible for any individual to keep up with the advance of all three of them. But just as the whole subject of astronomy became suddenly simplified by a change of standpoint at the very time when cycles and epi-cycles became most bewildering, so at the very time when these three sciences are becoming most complex and diverse they appear to be tending to unification and simplification. Pathology, for example, is now becoming to a great extent a branch of pharmacology, for while a few years ago its chief object was to discover, examine, and classify the microbes which give rise to disease, it is now striving rather

to discover the nature and actions of the ferments and poisons which they form, and by which they are able to cause disease and death in the animals they attack. Pharmacological investigation, instead of being confined to the alkaloids and other poisons formed by higher plants, has now extended to those formed by microscopic plants or microbes, and thus comes to include a great part of pathology. In the same way, though pharmacology is a branch of physiology, inasmuch as it deals with the phenomena of life as modified by drugs, yet physiology may, to a certain extent, be regarded as a branch of pharmacology, because some of the latest researches regarding the processes of life have been made by pharmacological methods, using the products of animal life instead of vegetable poisons. Amongst the pioneers in this line I may mention my two masters, Kühne and Ludwig, the former of whom by his chemical investigations has enabled us to differentiate the various products of albuminous decomposition, whilst the latter, with his pupils Schmidt-Mühlheim and Wooldridge, discovered the poisonous action of albumoses and peptones, and of the juices of various tissues when injected directly into the blood.

Before the proteid constituents of our food can be absorbed they must be split up during digestion into albumoses and peptones; yet these researches show that the very substances which are necessary to repair waste and are indispensable for the continuance of life prove fatal when introduced into the body in a wrong way or in too great quantity. But the products of the digestion of albumin do not normally enter the circulation as albumoses and peptones. During absorption they undergo changes of a synthetic nature in the walls of the intestine, and probably to a certain extent also in the liver, so that they again form harmless substances, and their poisonous properties are destroyed before they enter the general blood stream. But how is it that the ferments which decompose albuminous food and form poisons from it in the intestines do not pass into the blood and kill the animal by digesting the tissues and forming poisons from them? Of course pepsin cannot do so as it only acts in an acid medium, but there is no such hindrance to the action of trypsin, and yet it does not destroy the tissues composing the body itself. In all probability the reason why digestive ferments do not digest the tissues is not that they are destroyed in the digestive canal or yet that they are not absorbed, but that they are altered from active enzymes into inert zymogens which can be stored up without risk, and can again liberate active enzymes when these are required to digest a subsequent meal. In this respect they may be compared to the knives used by wandering peoples to cut up their meat, and which are not thrown away after each meal, but are simply put into sheaths which cover their edges and deprive them for a time of their cutting power.

But it is not in the intestine only that enzymes are found; they are also poured into the blood by the pancreas and probably by the thyroid and other glands. As our acquaintance with the processes of cell life increases it seems more and more likely that the tissue change on which functional activity depends is effected by enzymes, and the truer do the speculations of Van Helmont appear—that life is a process of fermentation. There can be little doubt that if enzymes in a free state were to circulate through the body they would do much harm, and, indeed, we may regard this as well-nigh proved in regard to the enzyme of tetanus. But their action is limited either by their conversion into zymogens or their localisation to the cells or tissues where their action is required. This is more readily seen in plants than in animals, and one of the best examples of it is that in germinating wheat. In the ordinary state of the grain the diastatic ferment is kept apart from the starch by a small layer of cellulose, through which the diastase cannot pass, but during germination another ferment appears which has the power of dissolving cellulose, and by breaking down this dividing membrane it allows the diastatic ferment to act upon the starch, and renders it available for the needs of the growing plant.

Enzymes appear to differ amongst themselves nearly as much as albumin, albumoses, and peptones. Some are easily separated from the cells in which they exist, whilst others are so closely united to the protoplasm that their separate existence apart from it has been denied. The yeast plant, for example, yields an invert enzyme which can be extracted with comparative ease, but the enzyme which splits up sugar into alcohol and carbonic acid is so firmly attached to the protoplasm of the cell that it is only within the last few months that it has been isolated by Buchner by the application of enormous pressure. It is probable that the enzymes contained in the cells of animal tissues differ in like manner, and that by the use of similar methods we may obtain a number of enzymes with which we are at present unacquainted. But it is not merely the products formed in the digestive canal or in the organs of animals during life, or even the alkaloids that are formed by the higher plants, that act as poisons. The processes of life are much the same in the lowest microbes as in animals or in the higher plants, and these microbes, by forming ferments and poisons, give rise to disturbance of function or death in animals. When grown in suitable media outside the body they produce enzymes and poisons, albumoses and alkaloids, and many of them continue to do so after their introduction into the body.

One of the most curious points, both in the chemistry of the higher plants and of microbes, is that they tend to form at the same time a poison and its antidote. In Calabar bean, for example, we find there are two poisons—physostigmine and calabarine, the former tending to paralyse the spinal cord and the latter to stimulate it, so that each poison to a certain extent antagonises the other. The same condition is found even more markedly in jaborandi, of which the two alkaloids pilocarpine and jaborine antagonise one another's action so that, although pilocarpine generally greatly predominates, it might be possible to get a specimen of the leaf having no action at all, although it contained a quantity of alkaloids. When injected into animals the toxins formed by microbes and the venins of serpents cause the production of antitoxins and anti-venins, which neutralise their action apparently by chemical combination in somewhat the same way as an acid and alkali, each poisonous by itself, combine to form a comparatively inert salt. But the two components here, like an organic acid and a mineral base, are unequally affected by destructive agencies, and the anti-venin may be destroyed, so that the venin again regains its activity. The conversion of zymogens into enzymes may be compared to the freeing of venins from their compounds, while the conversion of active venins into inert bodies by combination with anti-venins suggests that a similar process may occur in the case of active enzymes, by which they may be converted into inactive zymogens.

Perhaps the hypothesis I mentioned eight years ago to my pupil and friend, Mr. Hankin, that the germicidal power of organisms is proportional to their power to produce enzymes, may not be altogether unfounded, and possibly we may discover also that immunity, natural or acquired, is nothing more than an extension to the cells of the tissues generally of a power which is constantly exercised during digestion by those of the intestine and liver. This problem is one which pertains to all three sciences and has a most important bearing on practical medicine.

Practical medicine, except when empirical, depends for its advance on physiology, pharmacology, and pathology. A knowledge of the physiology of digestion has led to the satisfactory treatment of dyspepsia by the administration of digestive enzymes, and pharmacological research has enabled us to treat diseases of the circulation with a success previously undreamed of, by teaching us not only how to use aright old remedies, such as digitalis, but also how to apply new ones, such as strophanthus and amyl nitrite, and even to manufacture others, such as nitro-erythrol, which possess the special actions we desire but which are lacking in the drugs we already have. Indeed, new remedies, which shall alter tissue change, lower temperature, relieve pain, and procure sleep, are now being made in such numbers that it is hard to keep count of them. But amongst all the new gains of practical medicine none are so remarkable as those which we owe to pathology. Time would fail me to speak of the prevention and cure of zymotic diseases, but no less astonishing is the discovery that myxœdema depends on inactivity or absence of thyroid gland, and can be cured by the administration of its extract, which seems to act as an enzyme on living tissues, so that the heavy, shapeless features of the patient resume their natural expression, and the sluggish mental processes become quickened. An exhaustive study of enzymes and their products appears to be the most promising way of advancing our knowledge both of the nature and treatment of disease. Probably more is to be hoped for from an investigation into the nature and properties of those enzymes which are intimately associated with the protoplasm of the cells in the various tissues and organs than even of

those which are poured into the blood by glands having an internal secretion, such as the thyroid. For all organs, even those which like muscles and nerves are not glandular, have an action on the blood comparable to that of the yeast plant, which modifies the fluid in which it lives by the substances which it removes from or adds to it. It is to a knowledge of the processes which occur in the protoplasm of the cells in the intestinal wall and liver and of the enzymes by which these processes are in all probability carried out that we must look for an explanation of the conversion of the poisonous albumoses formed during digestion into innocuous albumins, and of dangerous enzymes into harmless zymogens. Moreover, it seems to me that it is by researches into the nature and action of the enzymes not only of microbes, but in the various tissues of the body in higher animals, that we shall learn how the microbes, like the enzymes of the intestinal canal, produce poisonous albumoses, and how the tissues, like the cells of the intestinal walls or liver, convert them into harmless or even protective substances. In this way we may hope to obtain an explanation of toxins and antitoxins, of pathogenesis and immunity, as well as of the nature of diseases unconnected with the presence of microbes, such as diabetes. Twenty three years ago I attempted to obtain a glycolytic enzyme from muscle, in order to enable diabetic patients to utilise the sugar in their blood. My attempt was unsuccessful, but we may still hope that by other methods we may obtain from animal organs various enzymes, the administration of which may prove as useful in other diseases as the thyroid gland in myxœdema.

Practical medicine depends on physiology, pharmacology, and pathology, but all three are tending to become more and more sub-divisions of the wider and all-embracing science of chemistry. It is to a chemist, Pasteur, that we owe the wonderful development of pathology within the last quarter of a century, and we may fairly regard his fellow-countryman, Lavoisier, as the founder of this science. Men from all countries, and especially from Germany, have aided its development; but it seems fitting that at this Congress, in acknowledging our obligations to this science, we should not omit to mention that at its head now stands a Russian, Mendeleef, whose marvellous prescience enabled him to predict the existence of elements which were then unknown, and even to describe their properties more correctly than those who first verified his predictions by obtaining the substances themselves. When we consider that little more than a hundred years have elapsed since the time of Lavoisier, and contemplate the vast benefits which medicine and its allied sciences have derived from chemistry during this time, our hopes cannot be otherwise than great for the centuries to come.

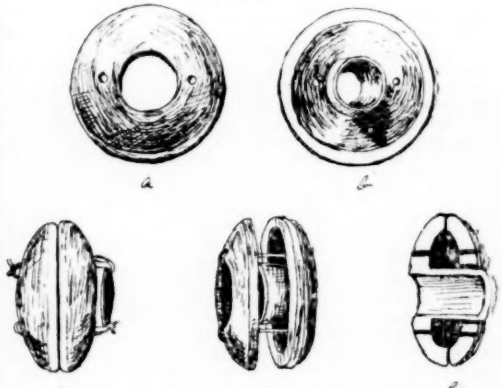
DECALCIFIED IVORY DISCS FOR END-TO-END AND LATERAL ANASTOMOSIS OF THE INTESTINE.[1]

BY DR. R. MARTIN GIL,

MEDICAL DIRECTOR OF THE "NOBLE" HOSPITAL OF MALAGA; CORRESPONDING MEMBER OF THE ROYAL ACADEMIES OF MEDICINE OF MADRID AND BARCELONA, ETC.

OF late years many eminent surgeons have made a special study of intestinal surgery with the result that important improvements have been effected in the treatment with a correspondingly greater number of successful operations. These improvements notwithstanding have not yet reached such a state of perfection as in other operations on the abdomen. The chief objection to Murphy's button is that a foreign body is introduced into the intestine, which may, if not expelled with the motions, itself prove a source of great danger to the patient. It is doubtless for this reason that the anastomotic button has not come into general use in Europe, and when some operators do employ it it is because they have nothing better to use. These buttons further possess the dangerous property of causing stenosis in the place where they are applied to the bowel, for the reason that the circumference of the button is usually smaller than that of the place where it is fixed. Dr. Murphy states that with his system there is no need for suture, which assertion is somewhat at variance with the facts, seeing that when, for instance, he carries out pylorectomy he is obliged to make two sutures, one in the duodenum and another in the pylorus. The same happens in ileo-colostomy after excision of the cæcum, and, finally, in the three sizes in which they are constructed the buttons are too large for the diameters of the bowel of children, which is a great drawback, as obstructions are very common during childhood. Neither can the system of using decalcified bones of different forms be recommended, as in no case where they are employed can suture be dispensed with, and the operation becomes too prolonged. The majority of operators employ suture alone, giving the preference to that of Czerny-Lembert. I have for a long time sought for a substance which should join the serous coat of the bowel and be ultimately digested after producing a perfect cicatrisation, but without giving rise to any stenosis whatever. For over three years my researches have lasted, and after vainly trying ox bones, the ribs of whales, and other substances, I thought of decalcifying pieces of ivory of different sizes, so that they might be large enough for my purpose after being prepared, as ivory, like bone, becomes reduced to half its dimensions under decalcification. I had some pieces of decalcified ivory turned in concavo-convex shapes (Fig. 1, A B), and of different sizes, from 8 millimetres

FIG. 1.



Decalcified ivory discs; (*d*) stretched apart to show the elastic; (*e*) in section.

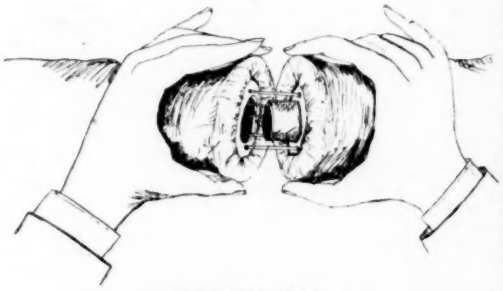
to 6 centimetres in diameter. One piece is furnished with a short hollow stem or shank, to which the other piece is adjusted. The thickness of the pieces is proportioned to their circumference. Beside the central hole there are two other very small orifices through which thin elastic bands pass that serve to join the pieces, thus forming a disc, as in C. These bands exercise a moderate pressure intended to produce atrophy of the tissue placed between the two pieces while not causing gangrene of the intestine. These bands are tied together with a firm knot, while the ends, to avoid the loosening of this knot before cicatrisation takes place, are also bound together with a silk thread.

Method of operating; end to-end junction of the intestine.—The bowel is gently emptied by the fingers at the point of operation and clamps are applied. When the bowel is cut through a continuous suture is inserted in it at one end; a cup is introduced, the mouth of the bowel is drawn together, and the thread is tied. At the outer end the same thing is done, and the cups are drawn together by the elastic bands, thus producing a perfect junction of the serous coats of the two ends of the bowel. A portion of the ileum was resected in a dog and the ends joined by the discs. The time spent on the anastomosis of the bowel was six minutes, and the whole operation lasted eighteen minutes. The animal rapidly convalesced, and in four days was well. Three weeks later I operated again and removed the piece of intestine where the junction had been effected. No trace of the disc could be found, and no constriction of the bowel had occurred. When very large discs are required I use three or four elastic bands to ensure their fitting together all round the circumference of the bowel.

[1] Abstract of paper read at the International Medical Congress at Moscow.

Ileo-colostomy (end-to-end anastomosis) had not previously been possible without employing sutures, but by my method this result is obtained as effectually as in other operations. A cup of corresponding diameter is fixed in the ileum, and in the colon another of larger size to adapt itself to its circumference. On the union of the two cups drawn together by the elastic bands the adjustment of the ileum to the colon is perfect. In one experiment the cæcum was resected and a cup 8 millimetres in diameter inserted in the ileum, and one of 12 millimetres in the colon, the larger cup having no central stalk; the two pieces of bowel were easily approximated, and after the operation, which lasted five minutes, the dog recovered completely. A fortnight later

FIG. 2.



Disc ready to be closed.

the abdomen was opened and a perfect cicatrix without any stenosis was found. The same method is employed in gastro-enterostomy, in which a large cup is inserted into the stomach and a small one into the duodenum. The junction of the two serous coats is thus complete. Lateral anastomosis is effected quite as easily. Cholecystenterostomy is performed with discs of the sizes required, according as the operator wishes to make larger or smaller the opening between the gall-bladder and the duodenum to ensure the escape of the bile. It might happen that an extra large incision might be required in the gall-bladder to remove a bulky gall-stone; in this case a large cup might be placed in that organ and a small one in the bowel, as is done in ileo-colostomy.

The number of dogs I have operated upon is twenty-two, and on them I have made twenty-three experiments. Among these two dogs died; one after anastomosis of the ileum with the colon lived forty hours, and then died from volvulus; the other death occurred from collapse after resection of a portion of the colon.

The discs should form a collection of twenty-seven sizes, from 60 millimetres, the largest, to 8 millimetres, the smallest.

Such are the results of the experiments carried out by me with my discs of decalcified ivory. I have not yet had the opportunity of using them on human beings.

Malaga.

A NOTE ON NEUROPATHIC DYSPEPSIA AND ITS CORRELATIONS WITH DISTURBANCES OF THE RHYTHM OF THE HEART.[1]

BY A. ERNEST SANSOM, M.D., F.R.C.P. LOND.,
PHYSICIAN TO THE LONDON HOSPITAL; PRESIDENT OF THE MEDICAL SOCIETY OF LONDON, ETC.

THIS communication contains a summary of the conclusions I have arrived at from a clinical study of a large number of cases in which there were manifested perversions of the rhythm of the heart in the sense of morbid acceleration (tachycardia), irregularity of action (arhythmia cordis), or abnormally slow action (bradycardia).

Group I., Essential tachycardia.—In those cases in which there was an abnormally rapid action of the heart persisting for long periods manifestations of dyspepsia were usually absent. In 46 cases I found no notable evidence of dyspepsia, paroxysmal or persistent. It was remarkable that an individual whose heart was beating more than 200 times in a minute should manifest no symptoms of distress whatever, but be occupied with his or her usual avocation. In cases manifesting a rate of heart pulsation of 192 and of 260 per minute I have observed a perfect absence of dyspnœa and of any signs of distress, the functions of digestion being to all seeming normally performed. In one-third of my cases there were no subjective symptoms of disorder of circulation, respiration, or digestion, though the condition of rapid heart continued. In another third severe pain at the præcordium was experienced, but there was no complaint of indigestion. It is clear that dyspepsia stands in no defined relation with the degree of tachycardia.

Group II., Tachycardia associated with some of the symptoms of Basedow's (Graves's) disease.—In these cases I found gastro-intestinal symptoms to be evidenced with a high degree of frequency. The association with the recognised signs of exophthalmic goitre might be marked or slight. In 40 per cent. of my cases the three cardinal signs of the affection—exophthalmos, enlarged thyroid, and persistently rapid heart—were present. In 31 per cent. the exophthalmos was not manifested, and in 20 per cent. the symptoms occured without thyroid enlargement. Muscular tremors were manifested in the great majority of cases. The form of dyspepsia manifested in most of these cases was paroxysmal. It occurred in attacks of the nature of gastro-intestinal crisis characterised by epigastric pain, retching, or vomiting, extreme flatulence, and in some cases diarrhœa. During the intervals there were no obvious disturbances of digestion and of necessity no wasting. In another section of the cases, though in these paroxysmal dyspepsia might not be manifested, there was extreme wasting. Cases manifesting very marked wasting constitute a well-marked section in Basedow's disease, and I have found this sign to be of unfavourable import. Consecutive or concurrent changes in the heart bear no relation with the manifestations of dyspepsia. I have noted that dilatation of the heart is more frequently manifested when the degree of tachycardia is slight. Conversely, when the heart-rate exceeds 150 per minute the heart is in most cases found to be small in outline. The paroxysmal dyspepsia is in no relation with the degree of tachycardia or with the co-existing changes in the heart. I have found that a considerable number of cases of tachycardia have been initiated by influenza. In 100 cases observed by myself in which symptoms referred to the heart were consequent upon the infection of influenza I found that persistent tachycardia was manifested in thirty-seven. In many of these there were present some of the signs of Basedow's disease, and I obtained abundant evidence to show that the complete *ensemble* of the affection could be initiated by influenza. In five of the thirty-seven cases of post-influenzal tachycardia there were well-marked crises of dyspepsia. The symptoms of the attacks were flatulence, nausea, gastralgia, and diarrhœa accompanied by dyspnœa. They occurred periodically without obvious provoking cause, and in many cases were manifested during the night. The signs were so suggestive of a neurosis that I termed them "vagus storms." It is a question for consideration whether the failure of nutrition in the section of cases attended with wasting, but not with paroxysmal dyspepsia, is not also due to a disorder of the central nervous mechanism.

Group III., Paroxysmal tachycardia.—It is a matter of common experience that attacks of palpitation of the heart are frequently associated with symptoms of dyspepsia. It is a question to be debated whether in such cases the gastro-intestinal irritation is the cause which disturbs the cardiac reflex or whether both these symptoms are of central nervous origin. I have considered this question in relation with the form of paroxysmal dyspepsia which is independent of disturbances of the heart-rhythm.

Group IV., Persistent cardiac arhythmia.—As in the case of persistent tachycardia, so in that of persistent arhythmia—even in the most extreme forms—there may be no manifestations of disorder of digestion. In many cases of extreme irregularity of the heart's action, as indicated by the sphygmographic and other precise methods of investigation, there has been no evidence of bodily discomfort or of ill performance of the functions of digestion. In such cases it is of the highest importance that the attention of the patient should not be directed to the irregular action of the heart. Such

[1] Abstract of a paper read at the International Medical Congress at Moscow.

irregularity may occur for months or years without discomfort and without danger; but if the patient's mind be allowed to dwell upon the symptoms subjective discomfort and mental troubles are apt to arise. It is undoubted that dietetic errors can cause irregularity of the heart's action, and that of necessity in such cases symptoms of dyspepsia concur. I have observed cases in which tea-drinking and the eating of potatoes have been the causes of irregular action of the heart, the cardiac rhythm returning to the normal some time after the dietetic errors had been corrected. On the other hand, there have been thousands of cases in which extreme errors of diet have been unattended with any detectable alteration of the cardiac rhythm. I consider, therefore, that for a gastro-intestinal reflex to produce cardiac arhythmia there must be certain predisposing conditions. These from an experience of a large number of cases are (*a*) gout in its acute or chronic manifestation; (*b*) osteo-arthritis (arthritis deformans) and spinal cord diseases, as locomotor ataxy, in which arthritic symptoms are manifested; (*c*) disturbances of the auditory faculty and naso-pharyngeal irritations; (*d*) mental disturbances and effects of severe nervous shock; (*e*) syphilis; (*f*) influenza; and (*g*) Basedow's disease. My clinical evidence shows that in a section of the cases of Basedow's disease extreme cardiac arhythmia is manifested and not tachycardia, as in the majority. I observed two sisters with all the signs of exophthalmic goitre; the one had a very rapid heart and the other manifested extreme cardiac irregularity. In several cases in the male sex I have found an extreme irregularity, a veritable *folie du cœur*. Gastric crises occur in these cases. In many of the cases of Basedow's disease with cardiac irregularity and paroxysmal dyspepsia no primary cause can be traced.

I have had abundant evidence to prove that irregularity of the action of the heart may be the direct consequence of the infection of influenza. Whilst tachycardia was induced by such infection in 37 per cent. of my cases, arhythmia was the consequence in 25 per cent. In twelve out of thirty cases of post-influenzal cardiac arhythmia there were symptoms of paroxysmal dyspepsia. In many these attacks were of great intensity, characterised by extreme agony referred to the abdomen or to the inter-scapular regions, flatulence, diarrhœa, dryness of throat, enfeeblement of voice, and intense depression. In some of the crises there were also dyspnœa, rigors, sneezing, and a sense of suffocation as from a grip at the throat. I observed several cases in which not only irregularity of the heart's action, but also some of the associated signs of Basedow's disease, with gastric intestinal crises, were distinctly traceable to the infection of influenza. Seeing that in my category of cases there were a considerable number in which influenza had initiated well-marked disease of the spinal cord and its membranes, and considering that in some of them the symptoms decidedly indicated neuritis of the vagus, the irregularity of the cardiac rhythm as well as the associated dyspepsia I consider must be due to a disorder of the nerve mechanism of the cardiac reflex as well as that of the nerve agencies regulating digestion. It is, I think, an interesting point, and one not generally accepted, that Basedow's disease with associated tachycardia or arhythmia is not infrequently the result of the infection of influenza. The evidence of pharyngitis in other cases lends a probability that other forms of infection, occult or untraced, may be also causes.

Group V., Persistent bradycardia.—My cases show that as in other forms of disturbance of the normal rhythm of the heart so in bradycardia, when the rate of pulsations is reduced far below the normal there may be no notable deviation from the natural functions of digestion. In a man aged seventy-eight years, observed four years ago, on many occasions the maximum rate of cardiac pulsations was 40 and the minimum 28. These were associations with gout, but no marked dyspepsia and fair health was maintained though the bradycardia continued. In young subjects the rate of cardiac pulsations is seldom below 60. At the ages of nineteen, twenty-two, and twenty-four years I have found it vary from 48 to 56. In these there have been usually some dyspeptic manifestations with symptoms of general depression. In many cases there have been mental aberrations. I have noted in several cases paroxysmal attacks of dyspepsia characterised by nausea, flatulence, and epigastric pain, and in some of these sneezing and enfeeblement of voice. The intensity of the paroxysms was usually less than in the cases of tachycardia and arhythmia. The evidence clearly showed that bradycardia was a very serious condition in a considerable section of the cases. The association with epilepsy, as pointed out by Tripier, was clearly proved. In some the attacks were momentary and of the nature of *petit mal*, in others a defined epileptic seizure occurred. It seemed most probable that the epileptic paroxysm was the result of the ischæmia of the brain due to the arrest of the heart's action. In a case in which the rate of the heart's pulsations varied between 35 and 24 I could predict from the longer arrest of the heart's action that an epileptic attack would occur.

It is shown from the evidence which I have observed that extreme bradycardia may be the result of disease or injury of the cervical portion of the spinal cord. In a case under my close observation I have found a pulse-rate of 38 and 40 per minute, with occasional halts of the heart for five seconds, due, as shown by post-mortem evidence, to involvement of the vagi nerves in a malignant growth. In a considerable section of cases I have found bradycardia to be the result of influenza. In the case of a man, aged forty-six years, who was in good health until he suffered from an attack of influenza, I found the heart-rate to vary between 33 and 19 per minute. Epileptoid attacks coincided. I have had under observation eight cases of post-influenzal bradycardia in which the pulse-rates were 56 (two cases), 54, 52, 48, 40, 36, and 19 per minute. The evidence seems to me to strongly point the conclusion that the bradycardia is due to a morbid condition of the nerve structures of the cardiac reflex. There is either an irritable lesion affecting the vagi nerves or their nuclei of origin, or else a destructive lesion of the *nervi accelerantes* of the heart whereby the inhibitory influences (vagi) are left relatively in the ascendant.

Group VI., Paroxysmal bradycardia.—I have observed in a man, aged fifty-four years, attacks recurring every afternoon for ten days, characterised by a reduction of the habitual heart-rate of from 72 to 48 per minute and coincidently severe epigastric pain, nausea, and extreme depression. The attacks ceased suddenly and the normal heart's action was resumed. In a second case, a man aged forty-six years, the pulse-rate of 80 fell to 56 and 40 per minute coincidently with abdominal pain, vomiting, and diarrhœa, constipation alternating. Both cases were post-influenzal. A complete restoration to normal conditions took place. In seven out of sixteen cases of bradycardia there were decided associations with dyspepsia.

Group VII., Paroxysmal dyspepsia without disturbances of the cardiac rhythm.—In many cases, both male and female, I have observed a train of symptoms, apart from any form of organic disease, which indicate a dyspepsia of neuropathic origin. In a man, aged twenty-four years, a typical athlete of splendid physique, there were periodic crises of severe epigastric pain with vomiting and complete anorexia. Extreme wasting occurred, the patient losing 47 lb. in weight. In a woman, aged forty years, there were similar symptoms with great wasting. In many cases there were alternations of these severe attacks and migraine. In some cases the tendency to the attacks existed from childhood and no determining cause could be traced. Heredity was no doubt a factor. In a considerable number influenza was a potent aggravating or disposing cause.

Conclusions.—1 Essential tachycardia is not accompanied by dyspepsia. 2. Paroxysmal tachycardia and the forms of tachycardia accompanied by signs, even slight, of Basedow's disease are very frequently associated with crises of dyspepsia. 3. Extreme cardiac arhythmia often occurs without manifestations of dyspepsia. 4. Gastro-intestinal irritations do not produce cardiac arhythmia without the concurrence of predisposing causes. 5. Cardiac arhythmia often replaces tachycardia in Basedow's disease. In such cases paroxysmal dyspepsia is frequent. 6. Well-marked bradycardia may exist without signs of dyspepsia. 7. Paroxysmal bradycardia is associated with crises of dyspepsia, and these crises occur in some cases of persistent bradycardia. 8. There is no defined relation between dyspepsia and the structural diseases of the heart which sometimes are manifested in cases of disturbed heart rhythm. 9. It is most probable that all forms of disturbed rhythm of the heart are due to marked affections of the nerve-element at the origin or in the course of the vagi nerves or the nerve mechanism of the cardiac reflex in the upper part of the spinal cord. 10. The attendant dyspepsia is due to an extension of the disturbance to the areas of origin or course of the gastro-intestinal branches of the vagi nerves. 11. All such alterations of the cardiac reflex nerve mechanism as well as the various disturbances of digestion

may be due to the toxic agencies of influenza or allied forms of infectious disease.

Bibliography.—Bristowe: On Recurrent Palpitation of Extreme Rapidity in Persons Otherwise Apparently Healthy, *Brain*, vol. x., 1888, p. 164; Broadbent: The Pulse, Cassell and Co., London, 1890, pp. 101 and 103; Huchard: Traité Clinique des Maladies du Cœur et des Vaisseaux, Paris, Doin, 1893, pp. 54, 276, 373; Maladie de Stokes-Adams, p. 309; Vincent: Des Tachycardies, Valeur Séméiological et Pathogénique, Paris, Steinheil, 1891; Potain: Clinique Médicale de la Charité; Des Palpitations (p. 139), Paris, Masson, 1894; A. Maude: Cases of Graves' Disease, St. Bartholomew's Hospital Reports, vol. xxviii., p. 9; Grob: Ueber Bradycardie, Deutsches Archiv für Klinische Medicin, 1888, No 42; Riegel: Ueber die Verlangsammung der Schlagfolge des Herzens, Zeitschrift für Klinische Medicin, 1890, p. 221; J. W. Ogle: The Slowness of the Pulse, THE LANCET, Jan. 30th, 1897, p. 286; Sansom: The Rapid Heart, Transactions of the Medical Society of London, vol. xiii.; The Irregular Heart, a Clinical Study, ibid., vol. xvi.; A Review of Cases Manifesting Pain at the Heart or Tachycardia Subsequently to Influenza, Transactions of the Royal Medical and Chirurgical Society of London, vol. lxxvii.; Diseases of the Spinal Cord Occurring after Influenza, Liverpool Medico-Chirurgical Journal, 1895, p. 118; The Irregular Heart after Influenza Brit. Med. Jour., vol. ii., 1894, p. 1042; The Diagnosis of Diseases of the Heart and Thoracic Aorta, London, Griffin and Co., 1892, pp. 68, 137, *et seq.*, 452 *et seq.*; Sansom and Torsillian: A Case of Malignant Disease of the Thoracic Mediastinal Glands with Dilatation of the Descending Aorta, Cardiac Intermission, and Bradycardia, Brit. Med. Jour., April 27th, 1895, p. 912; G. W. Balfour: The Senile Heart, pp. 63 *et seq.*, London, A. and C. Black, 1894.

INFANTILE INTUSSUSCEPTION:

A STUDY OF ONE HUNDRED AND THREE CASES TREATED EITHER BY ENEMATA OR LAPAROTOMY, AND A REPORT OF TWO HITHERTO UNREPORTED CASES.[1]

BY FREDERICK HOLME WIGGIN, M.D.,

SURGEON TO THE NEW YORK CITY HOSPITAL, GYNÆCOLOGICAL DIVISION, BLACKWELL'S ISLAND.

IT is a strange commentary on the advancement made by our science that at the close of this nineteenth century we are met to consider and decide, if we may, upon the comparative merits of the two methods of treatment for intussusception suggested many centuries ago—that of intestinal distension by air or water by Hippocrates, and that of abdominal section by Praxagoras. For while since their time much therapeutical ingenuity in the treatment of this disorder has been displayed, our greater pathological knowledge has pushed these remedies aside, and at this time we have only left for consideration a choice between enemata and laparotomy for the relief of this condition. Some time since a case of infantile intussusception came under my observation, and the questions which were raised led me to more fully investigate this subject. It was found that, while much attention had been given in England to this form of intestinal obstruction and many cases had been recorded in the medical journals, it had received but scant attention here, and that there were comparatively few recorded cases to be found in American medical literature. The conclusion was reached that either this form of intestinal disorder is of much more frequent occurrence abroad, or that it often fails of recognition here, or that, if diagnosed and treated, it is not deemed of sufficient importance to be recorded. When it is realised that intussusception occurring in young infants is practically a hopeless condition when left to nature's care (98 per cent. of all cases terminating fatally when the immediate or remote effects of sloughing are considered), the importance of the answers to the questions, What is the scientific and, therefore, proper procedure for the relief of these little sufferers? and, What is the prospect of the infant's recovery if this method is resorted to? manifests itself, and warrants a careful consideration of the results obtained by one or other of the methods previously alluded to, and a full statement of unrecorded individual experience in the discussion. In so doing, it is evident that we must determine what foundation exists for the popular belief, both medical and lay, that the method of intestinal distension by air or water is one of safety, and that, if unsuccessful, it in no degree interferes with the performance at a later period of laparotomy, or, on the other hand, that an abdominal section performed on an infant twelve months of age or under must of necessity result fatally, and is, therefore, only to be resorted to after long delay, and the failure of the so-called milder measure to afford permanent relief. Until these questions are finally answered to the satisfaction of the profession at large it is of the utmost importance that all cases of intussusception, whether treated by one method or the other, and with whatever result, should be fully reported. In this connexion the histories of Cases 14 and 15 hitherto unreported, and the abstracts from the histories collected by the writer from the English and American medical literature since the beginning of the present century, will be of interest.

[1] Read at a meeting of the New York Academy of Medicine on Jan. 2nd, 1896, and published in the "Record."

CASES OF INFANTILE INTUSSUSCEPTION SUCCESSFULLY TREATED BY ENEMATA OR INFLATION.

(GROUP No. 1.)

CASE 1.—A case of intussusception of the ileo-cæcal variety, which occurred during 1879 in a male infant aged six months, is recorded from notes furnished to Mr. Barker by the University College Hospital.[2] The patient was admitted to the hospital thirty-one hours after the beginning of the attack. Abdominal palpation revealed a tumour. Injections of air and water were made into the bowel, causing the disappearance of the tumour, which did not again appear.

CASE 2.—Dr. Andrew records in the *St Bartholomew's Hospital Reports* for 1892 a case of intussusception occurring in a male infant, aged four months, who came under observation on the second day of the disorder. An enema of eight ounces of water was administered. This procedure caused the apparent disappearance of the tumour, which reappeared the next day. Enemata were given hourly for nine hours, finally causing the tumour to disappear permanently.

CASE 3.—Sir William Savory records in the *St. Bartholomew's Hospital Reports* for 1892 a case of intussusception occurring in a female infant, aged twelve months, who came under observation on the first day. An enema, consisting of a pint of warm milk, was administered within nine hours after the disorder manifested itself. This treatment was followed by the apparent disappearance of the tumour, which, however, reappeared the next day. The enema was repeated with satisfactory results, and there was no recurrence of the trouble.

CASE 4.—Mr. Beck[3] records a case of intussusception of the ileo-cæcal variety which occurred during 1885 in a male infant, aged five months. The case came under observation on the first day. Abdominal palpation revealed a tumour. Under chloroform narcosis an enema was administered, and while this was being done the tumour was manipulated between the finger and thumb. Reduction followed and there was no further trouble.

CASE 5.—A case of intussusception of the ileo-cæcal variety, which occurred during 1888 in a male infant, aged seven months, and who came under observation six hours after the disorder began, is recorded from notes furnished to Mr. Barker by the University College Hospital, London.[4] Injections of air and water were tried with successful results.

CASE 6.—A case of intussusception of the ileo-cæcal variety is recorded from the notes of the University College Hospital, London,[5] as having occurred in a male infant, aged nine months, during 1888, and who came under observation on the first day. Under chloroform narcosis the bowel was inflated with air, the abdomen being meanwhile manipulated. This treatment resulted in the gradual disappearance of the tumour and of all the symptoms of the disorder.

CASE 7.—The following case of intussusception of the ileo-cæcal variety occurring in a male infant, aged six months, is credited to the University College Hospital.[6] The infant came under observation within the first twelve hours of the disorder. Abdominal and rectal examination revealed a tumour. Manipulation followed by enemata of air and water were tried with partial success, but the tumour soon reappeared. Reduction was finally effected by an enema, the reservoir being elevated three feet above the patient's body.

CASE 8.—Mr Gee records[7] a case of intussusception which occurred during 1890 in a male infant aged nine months. He came under observation on the second day. Abdominal and rectal examination revealed a tumour. Enemata were administered with successful results.

[2] Brit. Med. Jour., vol. i., 1894, p. 345.
[3] Ibid., vol. i., 1894, p. 346.
[4] Ibid., vol. i., 1894, p. 345.
[5] Ibid., vol. i., 1894, p. 345.
[6] Ibid., vol. i., 1894, p. 345.
[7] Ibid., vol. i., 1894, pp. 345-6.

CASE 9.—Dr. A. Jeffery Wood reports[8] a case of intussusception occurring in a male infant, aged six months, who came under observation on the second day. The infant, after being anæsthetised, was partly inverted and the bowel distended with air, deep massage being meanwhile employed. Under this treatment the tumour disappeared. One quart of warm water was injected into the bowel. This was followed one hour later by a stool. During the night the infant had seven dejections from the bowels, none of which contained blood. The disorder did not recur.

CASE 10.—A case is recorded of intussusception of the ileo-cæcal variety occurring during 1892 in a male infant aged ten months.[9] Abdominal examination revealed a tumour. The bowel protruded from the anal orifice. Inflation was tried with success, the tumour disappeared, and the infant recovered.

CASE 11.—Dr. Beeston records[10] a case of intussusception occurring in a male infant, aged seven months, who came under observation on the second day. Insufflations of air were tried, but proved unsuccessful. On the fourth day the patient had copious stools, and passed a piece of fleshy-looking matter having a putrid odour. There was no further trouble.

CASE 12.—Dr. D. J. Caddy records[11] a case of ileo-cæcal intussusception occurring in a female infant, aged six months, who came under observation on the first day. Abdominal palpation revealed a tumour. The infant passed blood from the anus and vomited soon after she was first seen. Water was forcibly injected into the rectum, causing the apparent disappearance of the tumour. Soon after one ounce of blood escaped from the rectum. The next morning the infant was again seized with colicky pains and cried violently. She passed more blood, and a further trial of enemata under increased pressure was made, with a successful result.

CASE 13.—Mr. J. T. C. Williams records[12] a case of intussusception occurring in a male infant, aged eight months, who came under observation on the first day, giving a history of intestinal derangement for one week. Examination of the abdomen showed it to be much distended, and palpation revealed a tumour. Inversion combined with massage and an enema, followed by insufflation of air, were tried, all to no purpose. Two basins were procured, each containing eight ounces of warm water. In one one and a half drachms of citric acid were placed, and in the other two drachms of bicarbonate of soda. The acid solution was thrown into the bowel through a catheter, and was followed by the alkaline solution. The catheter was quickly withdrawn, and the nates held together for several minutes. The tumour could now no longer be felt, the vomiting ceased, and a natural dejection from the bowels occurred two days later.

CASE 14. *Intussusception successfully treated by enemata.*—On June 23rd, 1894, I was requested to prescribe for a female infant, aged four months. It was stated that she had vomited the previous day, and that she was costive and very restless. As no further information was given at this time the diagnosis of indigestion was made and grey powder ordered. On June 24th a message was received to the effect that the child had had two movements of the bowels, consequently no haste was made to reach her. When she was seen the conditions were found to be different from what had been supposed, and the previous history, which was now drawn out, was as follows. The infant had been well from birth. She was nursed, but was given in addition cow's milk, to which sugar and lime water were added. She had been more or less costive from birth. Four days prior to my first visit the mother and child had taken an outing. The infant was fretful, and was in consequence jumped up and down constantly. During the evening she became more restless and vomited greenish fluid. On June 20th the infant was given castor oil, which was rejected, nothing being retained by her stomach throughout the day. An enema was administered, and a movement of the bowels resulted. On June 21st the vomiting persisted, and more oil was given, also another enema, which treatment was followed by a small stool. During the night of June 23rd the restlessness and vomiting became more marked. On June 24th a physician who was called in noticed that the restlessness was caused by colicky pains, and that a stool containing fæcal matter and bloody mucus had been passed. The parents insisted that something should be done for the infant's immediate relief, and the physician administered an enema which contained glycerine. Bloody mucus followed, and a tumour, which soon receded, protruded from the anus. When I reached the patient her bodily temperature was 102·4° F. and her pulse was 170. Palpation of the abdomen revealed a cylindrical tumour in the left inguinal and lumbar regions. It could also be felt on rectal examination. The case was diagnosed to be one of intussusception, probably of the ileo-cæcal variety. The infant was inverted and an enema given consisting of a quart of warm saline solution. The elevation of the reservoir was 3 ft. The enema was forcibly retained for some minutes, the abdomen meanwhile being palpated (not massaged) to prevent over-distension of the colon. When the liquid was allowed to escape it was found that the tumour had partly disappeared. One hour later a small fæcal movement occurred, gas escaped from the anus, and a second and larger stool was voided. Dr. J. Lewis Smith now saw the patient, and concurred in the diagnosis and the previous treatment. As the tumour had partially yielded to the former treatment it was decided to repeat it, the reservoir this time to be raised to 4 ft., and the abdomen kneaded during the administration of the enema. Under these procedures the tumour disappeared. Two hours later a small fæcal movement occurred, and five hours after the disappearance or reduction of the tumour the infant's pulse was 170 and the temperature had fallen to 101°, the face had regained its natural expression and colour, her cry was stronger, and two movements with free escape of gas had occurred. On June 25th it was noted that the infant had slept during the night, that the tumour had not reappeared, that the temperature was normal, that the abdomen was flaccid, and that three soft, yellow, pasty stools had been passed. The further convalescence was uneventful.

CASE 15. *Intussusception successfully treated by enemata.*—I am indebted for the history of the following case of intussusception to Dr. Frank Overton, of Patchogue, Long Island. He reports that during August, 1895, a female infant, aged six and a half months, came under his observation. She had been well from birth. On the morning of the first day she was visited she cried violently, and apparently had colicky pains, which were accompanied by a rise of bodily temperature. This condition yielded to treatment. A few weeks later, on Sept. 25th, 1895, the infant was again seized with severe abdominal pains, cried persistently, and refused to be nursed. The mother gave the infant castor oil and paregoric, and this treatment was followed by a natural dejection from the bowels. In the evening the child began vomiting, and presented a peculiar apathetic appearance, crying continually. Her bodily temperature was 99·5° F. and her pulse was 120. There was no abdominal distension and grey powder was ordered. Early on the morning of Sept. 26th she voided two ounces of blood, and later a smaller quantity. She now cried constantly and vomited frequently. Her temperature was 102° and her pulse was 140, and intussusception was suspected. At 7 A.M. her temperature was 103° and her pulse had risen to 180. At 9 A.M. a consultation was held. Abdominal palpation revealed the fact that there was no distension of the bowels, but that there was a localised point of tenderness in the right side just below the umbilicus, and there a small tumour was finally felt. A reservoir was filled with warm saline solution and raised 5 ft. above the infant's body, which was partly inverted. All the water possible, without causing over-distension of the colon, was injected into the bowel and forcibly retained. Massage was also applied to the abdominal wall. The child became quiet, and after five minutes had elapsed the water was allowed to escape. The tumour could now only be felt with difficulty, and the previously described procedure was repeated. After the escape of the second enema a large fæcal movement was voided containing bloody mucus. The tumour had now disappeared. The change in the patient's countenance was magical, the vomiting ceased, and she fell asleep. During the succeeding hours she was nursed freely. On Sept. 27th it was noted that the infant had slept all night, that her temperature was normal, and that a large fæcal movement which contained neither blood nor mucus was voided. Convalescence was uneventful.

CASE 16.—Dr. Ruff reports[13] a case of intussusception

[8] Australian Medical Journal, vol. i., 1894, p. 287.
[9] University College Hospital Reports in Brit. Med. Jour., vol. i., 1894, p. 346.
[10] Australasian Medical Gazette, vol. ii., 1893, p. 373.
[11] Brit. Med. Jour., vol. i., 1894, p. 126.
[12] THE LANCET, March 3rd, 1894.
[13] Medical News, vol. xl., p. 299.

occurring in a male infant, aged seventeen days, which came under observation five hours after the first seizure. The infant was partly inverted, and an enema of water given and forcibly retained for five minutes. This proving unsuccessful inflation was tried, and then alternating injections of air and water at intervals for two hours. This treatment proving ineffectual chloroform was administered, and abdominal massage practised without benefit. Morphia was given, then alternating injections of air and water at intervals for six hours. This treatment was followed two hours later by a stool, and four hours after this occurred the infant started suddenly, and the tumour could no longer be felt. There was no reappearance of the disorder.

CASES OF INFANTILE INTUSSUSCEPTION UNSUCCESSFULLY TREATED BY ENEMATA OR INFLATION.
(GROUP No. 2.)

CASES 1 TO 8.—Mr. Gorham,[14] records eight cases of intussusception occurring in infants whose ages ranged from three to eleven months. They were all treated in the first place by purgatives, and this treatment proving ineffectual by enemata. The cases all terminated fatally.

CASE 10.—Dr. F. Taylor and Mr. Golding Bird[15] report a case of intussusception of the ileo-cæcal variety occurring during 1881 in an infant, aged eight months, who came under observation on the first day. Abdominal and rectal examination revealed a tumour, and there were blood and mucus on the diaper. The bowel was distended with air and the tumour under this treatment apparently disappeared, only to return some hours later. Chloroform was then administered, and inflation again tried with increased pressure, but without avail, as the infant soon died. The necropsy revealed the fact that the invaginated bowel remained unreduced. Forcible inflation with air was tried (without result), and then with water, which reduced the ileum, but left the colon inverted. This proved also to be gangrenous. Under the injection of water the peritoneal and muscular coats of the bowel gave way at several points, leaving the mucous coat intact.

CASE 11.—Mr. Andrews records[16] a case of intussusception which occurred during 1881 in an infant, aged four months, who came under observation on the third day. Four enemata were administered. After the last one the tumour could not be felt. On the following day the infant died. The necropsy revealed the fact that the invaginated bowel remained unreduced. No evidence of peritonitis existed.

CASE 12.—Mr. Barker records[17] a case of intussusception of the ileo-cæcal variety occurring in a female infant, aged four months, who came under observation during the first twenty-eight hours. Inversion and enemata of air and water were tried, causing the apparent reduction of the tumour, but it reappeared nine hours later. The enemata were repeated with apparent success. Two hours later the tumour could again be made out, and it was again apparently reduced by enema. The infant collapsed and died. The necropsy revealed the fact that the invaginated bowel had never been completely reduced and that it was gangrenous.

CASE 13.—Mr. Cripps records[18] a case of intussusception occurring during 1884 in a male infant, aged four months, who came under observation on the fourth day. Under chloroform narcosis an enema consisting of one and a half pints of water was administered. While this was being accomplished the infant vomited, inspired vomited material, and died. The necropsy revealed two lacerations of the bowel, probably caused by the enema.

CASE 14.—Mr. Baker records[19] a case of intussusception occurring during 1884 in a male infant, aged seven months, who came under observation on the eighth day. Two enemata were administered, and the last apparently reduced the invagination, as the tumour could no longer be felt. Five hours later, however, the infant died. No necropsy was made.

CASE 15.—Mr. Andrews records[20] a case of intussusception occurring during 1886 in a male infant, aged four months, who came under observation on the fourth day. Six enemata of oil and two of milk were administered. This treatment was followed by the infant's death. The necropsy revealed the fact that the invagination had been only partially reduced.

CASE 16.—Mr. Mortimer reports[21] a case of intussusception occurring in an infant, aged eight months, who came under observation on the fourth day. Under chloroform narcosis abdominal palpation revealed a tumour. This procedure was followed by collapse. The infant was stimulated and two enemata, each consisting of about two ounces of fluid, were administered. After the last one had escaped the tumour could no longer be felt. Opiates were given, and for two days the only symptoms were occasional expressions of pain and increasing abdominal distension. At the end of this time vomiting re-commenced and the tumour re-appeared. Chloroform was administered a second time and ten ounces of water were injected into the bowel, the reservoir being raised three feet. Following this, three enemata were administered and the tumour partially disappeared. The next day a pint of water was injected at a lower pressure than previously, and it was repeated on the succeeding day. A few hours later the infant expired. The necropsy revealed three points of rupture in the descending colon.

CASE 17.—Dr. J. Aitken Clark records[22] a case of intussusception occurring on Nov. 22nd, 1892, in a male infant, aged five months, who came under observation on the second day. Opium and enemata were administered frequently without result. The child died on the sixth day of the disease. The necropsy revealed the fact that a double intussusception remained unreduced, one at the splenic flexure and the other at the sigmoid flexure of the colon.

CASE 18.—Dr. Edward Deanesly records[23] a case of intussusception of the ileo-cæcal variety occurring in a female infant, aged seven months, who came under observation on the fifth day after the bowel protruded from the anal orifice. A history of a month's previous illness was given. Two days prior to the infant's admission to the hospital the mother returned the bowel inside the anus and gave the infant castor oil. This treatment aggravated the symptoms, the bowel again appeared outside of the anus, and a small stool containing blood was passed. The bowel was returned with ease inside the anus, and on pushing it up the ordinary abdominal tumour was recognised. An anæsthetic was administered, and was followed by an enema of one pint of water having a head of two feet, the abdomen being meanwhile massaged. After the fluid escaped the tumour could no longer be felt. The bowels were moved twice. The next day, as the infant was drowsy, the opiate was discontinued. Towards evening the infant vomited, and during the succeeding twenty-four hours the bowel once more protruded. Under chloroform narcosis it was reduced by enema, but it re-appeared the following day, when reduction was again apparently effected by enema. Twenty-four hours later death occurred. A necropsy revealed the fact that the invagination remained unreduced, and that its reduction could easily have been effected by laparotomy.

CASE 19.—Mr. Winter reports[24] a case of intussusception of the ileo-cæcal variety occurring in a female infant, aged seven months, who came under observation on the second day of the disorder. At this time a tumour protruded from the anus. Under chloroform narcosis one pint of water was injected into the bowel, the receptacle containing it being raised two feet, and the abdomen meanwhile being massaged. Under this treatment the tumour disappeared. The next day a normal stool occurred. Two days later the bowel again protruded. Chloroform was again employed, and a second enema was administered, and reduction of the tumour was apparently effected. The following day the bowel again protruded. Under chloroform narcosis an enema was given with apparently satisfactory results, but on the succeeding day the infant died. At the necropsy it was found that the bowel protruded from the anus, as it had done prior to death. The intussusception was found to lie in the exact centre of the abdominal cavity. It lay down alongside the spine, and was closely attached to it by the mesocolon, and it passed straight downwards from about the third lumbar vertebra to the pelvic outlet. The protruding mass was returned inside the rectum, and an attempt made to reduce it from above by pulling the entering part of the ileum, but it was impossible to do so. The reduction was ultimately effected with ease by encircling the bowel below the apex of

[14] Guy's Hospital Reports, vol. iii., p. 330.
[15] Transactions of the Clinical Society, vol. xvi., p. 67.
[16] St. Bartholomew's Hospital Reports for 1892.
[17] Brit. Med. Jour., vol. i., 1894, p. 345.
[18] St. Bartholomew's Hospital Reports, 1892, pp. 97-111.
[19] Ibid., p. 87. [20] Ibid.
[21] THE LANCET, May 23rd, 1891.
[22] The Edinburgh Hospital Reports, 1894, p. 239.
[23] THE LANCET, March 10th, 1894.
[24] THE LANCET, March 10th, 1894, p. 600.

the intussusception with the thumb and finger, and holding the bowel a few inches lower down. The apex was then pushed up with the fingers. No adhesions had formed between the opposed peritoneal surfaces of the entering and returning layers.

CASE 20.—Dr. J. Aitken Clark reports[23] a case of intussusception of the ileo-cæcal variety occurring during January, 1894, in a male infant, aged nine months, who came under observation on the third day. The infant was inverted and enemata administered at short intervals, but without result, death occurring on the evening of the third day. The necropsy revealed the fact that the invaginated bowel remained unreduced.

CASES 9, 21, AND 22.—Mr. Hutchinson cites[26] three cases of intussusception within his own experience where infants were treated by enemata of air and water, which treatment was followed by death. The necropsies revealed the fact that the invaginations in all cases remained unreduced.

CASE 23.—Mr. J. D. Mortimer records[27] a case of intussusception occurring in an infant, aged three months, who came under observation on the first day of the disease. The infant had vomited and passed blood from the anus. Rectal examination revealed a tumour. The bowel was inflated with air and the tumour disappeared. Opiates were given. Some hours later the vomiting re-commenced and the abdomen became distended. Collapse followed and the infant died. The necropsy revealed the fact that the invagination had not been reduced. A tube was tied into the rectum and connected with a reservoir containing water and elevated two feet above the cadaver. The water was allowed to pass into the intestinal canal. In a few minutes the invagination was almost reduced but about one inch of the ileum, the cæcum, and part of the vermiform appendix remained tightly ensheathed in the colon. After fifteen minutes of sustained pressure the reservoir was raised from three to four feet, and a slight further reduction of the invaginated portion of bowel took place. This went no further, and in four minutes the colon ruptured in three places just below the intussusception. The invagination, though, was very readily reduced by manipulation from below without obvious damage. There was a little lymph on the peritoneal surfaces of the cæcum, and its mucous membrane was infiltrated and slightly shreddy. The valve was much swollen, and by its obstruction would probably have caused rupture at the moment of complete reduction had this been effected by the enema.

Post-mortem experiments.—Mr. Mole describes[28] some experiments made on infantile cadavers. He found that when one and a half pints of water had been injected into the bowel under a pressure of one and a half pounds to the square inch (3 ft.) the liquid passed through the ileo cæcal valve; also that air could be made to pass the same point. His conclusions were: (1) that no harm can be done to healthy intestine by enemata of fluids under a moderate pressure; (2) that hydrostatic pressure is more uniform, and therefore less likely to cause rupture of the bowel; and (3) that the part most likely to be injured by over-distension is the transverse colon.

CASES OF INFANTILE INTUSSUSCEPTION UNSUCCESSFULLY TREATED BY LAPAROTOMY.
(GROUP NO. 3.)

CASE 1.—Ashurst, in the course of an article entitled the History of Laparotomy for Intussusception,[29] states that the first laparotomy performed on an infant for the relief of an intussusception was by Gerson, and reported by Hackman, of Hamburg. The operation was performed on Sept. 18th, 1823. The subject was a male infant, aged twelve weeks. An oblique incision was made in the direction of Poupart's ligament on the left side. While effort was being made to reduce the invagination the bowel gave way at a gangrenous point, and the operation was abandoned, and the infant expired.

CASE 2.—Spencer Wells reports[30] a case of intussusception occurring in an infant, aged four months, who came under observation on the third day of the disease. The operation was performed on the following day when the infant was collapsed. The child died five hours later.

CASE 3.—Mr. Barker credits Busch[31] with a case of intussusception occurring during 1869 in a male infant, aged seven months, who came under observation on the fourth day of the acute illness. Laparotomy was performed; the invaginated gut proved to be irreducible, therefore an artificial anus was made. Death occurred eight days later.

CASE 4.—Ashurst credits Professor Weinlechner, of Vienna,[32] with a case of intussusception of the ileo-cæcal variety, which occurred during 1871 in a female infant, aged six months. Laparotomy was performed on the fourth day, and was followed by death a few hours later.

CASE 5.—A case of intussusception of the ileo-cæcal variety occurring during 1873 in an infant, aged five months, is credited by Barker to Duncan.[33] A history of several days' previous illness was given, but the day upon which the infant came under observation is not noted. Laparotomy was performed, but proved unsuccessful, death ensuing on the following day.

CASE 6.—Mr. Jonathan Hutchinson records[34] a case of intussusception of the ileo-cæcal variety occurring in an infant, aged six months, who came under observation on the third day. Enemata had previously been administered without result. The patient was collapsed and failing, therefore laparotomy was performed at once. The invaginated portion of bowel was reduced with difficulty. The case terminated fatally six hours later.

CASE 7.—Mr. Barker credits Howse[35] with a case of intussusception of the ileo-cæcal variety occurring during 1876 in an infant, aged five months, who came under observation after a month's indisposition. Laparotomy was performed. Death ensued a few hours later.

CASES 8 AND 13.—Stage is credited[36] with two cases of intussusception, one occurring during 1876 and the other in 1880. The first was a female infant, aged six months, who came under observation on the second day. Laparotomy was performed, and death ensued a few hours later. The second was a male infant, aged three months, who came under observation on the first day. Laparotomy was performed, and was followed by death two and a half days later.

CASE 9.—Mr. Smith records[37] a case of intussusception of the ileo-cæcal variety occurring during 1877 in a male infant, aged eight months, who came under observation on the fourth day, giving a history of two days' previous illness, the chief symptoms of which were abdominal pain, vomiting, and the passage of blood from the anal orifice. No tumour could be felt on making either abdominal or rectal examination. Inflation on the second day had afforded slight relief. It was tried again on the third day, and followed on the fourth day by enemata, which seemed to give some relief. Laparotomy was, however, performed on the fifth day. There were no evidences present of peritonitis, although the ileum which had slipped through the ileo-cæcal valve was gangrenous. This portion of gut was excised and an anastomosis effected. Death followed the operation five hours later.

CASE 10.—Mr. Beck is credited[38] with a case of intussusception of the ileo-cæcal variety occurring during 1877 in a female infant, aged eight months, who came under observation five and a half hours after the beginning of the attack. Repeated enemata of oil and air were administered without result, and twenty-six hours from the beginning of the disorder laparotomy was performed. The invaginated bowel, while deeply congested, was easily reduced. The operation, however, was unsuccessful, being followed by death from septic peritonitis.

CASE 11.—Sands is credited[39] with a case of intussusception of the ileo-cæcal variety occurring during 1878 in a male infant, aged six and a half months, who came under observation on the second day. Laparotomy was performed and was followed by death four hours later.

CASE 12.—Corley is credited[40] with a case of intussusception of the colic variety occurring during 1879 in an infant, aged nine months, who came under observation after several days' illness. Laparotomy was performed and was followed by death four hours later.

---

[23] Edinburgh Hospital Reports for 1894, p. 239.
[24] Transactions of the Medico-Chirurgical Society, vol. lvii.
[27] THE LANCET, May 23rd, 1891.
[28] Bristol Medico-Chirurgical Journal, 1894, p. 65.
[29] American Journal of the Medical Sciences, vol. lxviii., p. 54.
[30] Ibid.
[31] THE LANCET, Aug. 11th, 1888.
[32] American Journal of the Medical Sciences, vol. lxviii., p. 54.
[33] THE LANCET, Aug. 11th, 1888.
[34] THE LANCET, Dec. 18th, 1875.
[35] THE LANCET, Aug. 11th, 1888.
[36] THE LANCET, Aug. 11th, 1888.
[37] St. Bartholomew's Hospital Reports for 1892, vol. xxviii., p. 106
[38] Brit. Med. Jour., vol. i., 1894, p. 348.
[39] THE LANCET, Aug. 11th, 1888.
[40] THE LANCET, Aug. 11th, 1888.

CASE 14.—Mr. R. J. Godlee reports[41] a case of intussusception of the ileo-cæcal variety occurring in 1882 in an infant aged fourteen weeks. Laparotomy was performed and the invagination was reduced with difficulty. The infant died, and the necropsy revealed the fact that the reduction at the time of operation was only partial.

CASE 15.—Mr. Walsham is credited[42] with a case of intussusception occurring during 1882 in a male infant, aged seven months, who came under observation on the third day. Distension of the bowel with air and water was tried. This treatment proving unsuccessful, laparotomy was performed, notwithstanding the fact that peritonitis existed. The invaginated bowel was reduced with difficulty. The operation was followed by death.

CASE 16.—Marsh records[43] a case of intussusception occurring during 1882 in a female infant, aged eight months, who came under observation on the second day. Inflation with air was employed, but without success. Laparotomy was then performed, and the invaginated bowel was easily reduced. Death ensued on the following day.

CASE 17.—Braun is credited[44] with a case of intussusception of the ileo-colic variety occurring during 1882 in a male infant, aged three months, who came under observation on the fifth day. Laparotomy was performed, and as the invagination could not be reduced it was excised and an artificial anus made. Death ensued one hour later.

CASE 18.—Dr. Kudlich and Dr. Jacobi record[45] a case of intussusception occurring during 1882 in a female infant, aged two months, who came under observation eighteen hours after the onset. Enemata and massage were first unsuccessfully employed, and were followed by laparotomy. Great difficulty was experienced in reducing the invaginated bowel, and the operation was followed by death.

CASE 20.—Mr. R. J. Godlee reports[46] a case of intussusception occurring during 1882 in an infant, aged seven months, who came under observation on the third day. Abdominal palpation revealed a tumour in the right umbilical region. Enemata of air and water were first tried without success. Laparotomy was performed under chloroform narcosis. The invagination, which proved to be of the ileo-cæcal variety, was reduced with some difficulty. The operation was followed by death, due to septic peritonitis.

CASE 21.—Symonds is credited[47] with two cases of infantile intussusception. The cases occurred during 1884. The first was of the ileo-cæcal variety and occurred in a male infant, aged five months. He came under observation on the seventh day of acute illness following thirteen days of indisposition. Laparotomy was performed and was followed by death.

CASE 22.—The second case occurred in a female infant, aged six months, and came under observation on the twentieth day of sub-acute illness. Laparotomy was performed, and was also followed by death.

CASE 23.—Mr. Beck records[48] a case of intussusception of the ileo-cæcal variety occurring during 1885 in a male infant, aged five months, who came under observation fifty-five hours after the onset. Abdominal palpation revealed a tumour. Injections of air and water were tried, but, proving unsuccessful, laparotomy was performed. The invagination proved irreducible, and the operation was abandoned. Death soon occurred.

CASE 24.—Mr. Edmund Owen reports[49] a case of intussusception occurring in a female infant on the day of her birth, who came under observation on the second day. Prior to this castor oil had been given. Digital exploration of the rectum proved the bowel to be pervious. Under chloroform narcosis an enema was administered, but without result. On the following day (3) the enema was repeated, but without affording relief. Laparotomy was performed, and the first piece of small intestine which presented in the wound was seized, and an artificial anus made. No attempt was made to find the invaginated portion of intestine. The infant survived the enterectomy six days, dying on the ninth day after birth.

CASE 25.—Horseley is credited[50] with two cases of infantile intussusception occurring during 1885. The first case was that of a male infant, aged four months, and was of the ileo-cæcal variety, and came under observa ion on the fourth day. Laparotomy was performed, and the intussusception proving irreducible it was excised, and an artificial anus was made. Death soon followed the operation.

CASE 26.—The second case also occurred in a male infant, and was of the ileo-cæcal variety. It came under observation nineteen hours after the onset. Laparotomy was performed. Death followed thirty hours later.

CASE 27.—Two cases of intussusception are credited to Jacobson.[51] The first occurred in 1886 in a male infant, aged five months, who came under observation with a history of three weeks' previous illness. Laparotomy was performed, and the invaginated portion of bowel was found to be partly gangrenous and irreducible. The infant s condition at this time was fairly good, but after the excision of the invaginated gut he became very bad and he soon expired.

CASE 28.—The second case occurred in an infant, aged eleven months, who came under observation with a history of a month's previous illness. Laparotomy was performed, and the invaginated portion of bowel was found to be irreducible. The operation was concluded without resection of the tumour in the hope that spontaneous cure would result by sloughing. Death ensued twenty-four hours later.

CASE 29.—Dr. Van Arsdale records[52] the fact that he had resorted to laparotomy three times in the treatment of infantile intussusception. The operation was followed by death in all of the cases. Since this report Dr. Van Arsdale has kindly furnished me with additional details of these cases. They occurred about 1887 in infants under six months of age. In one case peritonitis existed at the time of operation, and the bowels were much distended. The trouble was not satisfactorily located and the operation was incomplete.

CASE 30.—In another of the cases the intussusception was irreducible and an artificial anus was made.

CASE 31.—The same treatment was adopted in the third case.

CASE 32.—Mr. Pick records[53] a case of intussusception of the enteric variety occurring during 1887 in an infant, aged six months, who came under observation with a history of three weeks' previous indisposition, and the last two days of which had been acute. Abdominal examination revealed a tumour in the left inguinal and lumbar regions. The infant was given chloroform, inverted, and the bowel inflated with air. Under this pressure the fingers which had been placed on the abdomen over the tumour felt it suddenly melt away. Opiates were administered, but about nine hours later the infant did not appear as well, and an enema of oil was administered. On the following morning the abdomen was tender and somewhat distended. A few hours later Mr. Pick found the infant collapsed and performed laparotomy. No invagination was found, but a piece of small intestine six inches in length, which was collapsed and showed signs of having been constricted at either end, and looking paralysed. The bowel immediately below this portion of gut was also empty and collapsed. The operation was well borne, but soon after the infant suddenly collapsed and shortly died. Mr. Pick's explanation of this condition was that the first portion of gut found collapsed had been involved in the intussusception, that it had been reduced by the air pressure, but that the gut had been so long constricted that it could not recover itself after its release; therefore, the symptoms continued unchanged after the reduction.

CASE 33.—Mr. Walsham is credited[54] with a case of intussusception occurring during 1888 in an infant, aged eight months, who came under observation on the first day. Laparotomy was performed, and at the point of beginning of the invagination a small sessile tumour was found. Death followed the operation twenty-four hours later.

CASE 34.—Mr. Marsh records[55] a case of intussusception of the ileo-cæcal variety occurring during 1889 in a male infant, aged four months, who came under observation on the fourth day. A previous history of abdominal pain, vomiting, and passage of watery stools, which contained blood, was given. Abdominal and rectal examination revealed a tumour. Laparotomy was performed, and

[41] Transactions of the Clinical Society, vol. xvi., p. 67.
[42] St. Bartholomew's Hospital Reports for 1892, pp. 97 to 111.
[43] St. Bartholomew's Reports for 1892.
[44] THE LANCET, Aug. 11th, 1888.
[45] Medical Record, vol. xxi., p. 299.
[46] Transactions of the Clinical Society, vol. xvi., p. 67.
[47] THE LANCET, Aug. 11th, 1888.
[48] Brit. Med. Jour., vol. i., 1894, p. 346.
[49] Ibid., vol. i., 1885, p. 1201.
[50] Ibid., vol. i., 1894, p. 346.
[51] THE LANCET, June 11th, 1887.
[52] Annals of Surgery, vol. xx., pp. 418-19.
[53] THE LANCET, June 13th, 1891.
[54] St. Bartholomew's Hospital Reports for 1892.
[55] Ibid., p. 111.

difficulty was experienced in reducing the invaginated bowel. Death ensued a few hours later from exhaustion.

CASE 35.—Mr. Cripps records[56] a case of intussusception of the ileo-cæcal variety occurring during 1890 in a male infant, aged five months, who came under observation on the third day. A previous history of several days' illness was given, the chief symptoms of which were abdominal pain, vomiting, and the passage of blood-stained mucus from the bowel. Enemata of warm water failed twice to reduce the invagination. Abdominal and rectal examination revealed a tumour. Laparotomy was performed, and the gut was apparently reduced, but death occurred two hours later. The necropsy revealed the fact that the intussusception had been only partially reduced. There was no evidence of peritonitis.

CASE 36.—Mr. Walsham is credited[57] with a case of intussusception occurring during 1890 in a male infant, nine months of age, who came under observation on the third day. Laparotomy was performed. The invaginated bowel was easily reduced. Death followed the operation. The necropsy revealed the fact that there was a small perforation in the transverse colon and that death was due to septic peritonitis.

CASE 37.—Mr. A. E. Barker records[58] a case of intussusception occurring in an infant, aged four months, during 1891, who came under observation on the fourth day. An unsuccessful attempt to reduce the intussusception by inflation had been made. On examination the infant was found to be collapsed. A gangrenous odour was emitted. Under chloroform narcosis rectal and abdominal palpation revealed a tumour. Laparotomy was performed. The gut was found to be gangrenous and was excised and the divided ends joined. Death ensued ten hours later. The necropsy proved the sutures of the bowel to be firm, and they resisted strong pressure of water without leaking.

CASE 38.—Dr. F. J. Shepherd records[59] a case of intussusception of the ileo-cæcal variety occurring in an infant, aged seven months, who came under observation on the second day. Examination at this time revealed a dark-coloured protrusion from the anus. Laparotomy was performed under chloroform narcosis. On account of the intestinal distension the invaginated gut was found with difficulty and reduced only after the intestine had been incised. The operation was followed by the infant's death three hours later.

CASE 39.—Mr. Paul Bush reports[60] a case of intussusception occurring in an infant, aged four months, who came under observation on the third day of the disease. Enemata were administered without success. Laparotomy was performed. The intussusception proved to be of the enteric variety and irreducible. The tumour was excised and an artificial anus made. Peritonitis ensued, and the infant died twenty-four hours later.

CASE 40.—Dr. Abbé reported[61] a case of intussusception occurring during 1893, which came under observation sixteen hours after the onset. Laparotomy was performed. The invaginated bowel was reduced with much difficulty on account of the strong adhesions which had already formed. Death followed the operation twenty-four hours later.

CASE 41.—Mr. A. E. Barker records[62] a case of intussusception occurring in a male infant, aged four months, who came under observation on the third day. Abdominal and rectal palpation revealed tumour, and blood and mucus were passed from the anal orifice. Under chloroform narcosis warm water was injected in the bowel from a reservoir raised three feet above the patient's body. When five ounces had entered the fluid began to escape, and the tumour could no longer be felt. An opiate was given, and the infant slept well all night. At 6 A.M. on the following morning the child began to scream, and soon afterwards passed blood and mucus from the anus. Under chloroform narcosis laparotomy was performed, the operation occupying only eight minutes. This was succeeded by collapse and the infant died twenty-four hours later. The necropsy was negative.

CASE 42.—Dr. Briddon, at the meeting of the New York Surgical Society, held on May 23rd, 1894,[63] reported a case of intussusception occurring in an infant, aged eight months, who came under observation on the second day in a state of collapse. Laparotomy was performed. The invagination was reduced with difficulty. Death ensued five hours later.

CASE 43.—Dr. J. F. Erdmann records[64] a case of intussusception of the enteric variety occurring in January, 1895, in a male infant, aged eight and a half months, who came under observation on the fourth day. Enemata had previously been unsuccessfully employed. Laparotomy was performed, and the invaginated portion of the ileum, which proved to be in a gangrenous condition, was removed (six inches), and an end-to-end anastomosis effected by means of a Murphy's button. Septic peritonitis existed at the time of operation, and the infant died a few hours later.

CASES OF INFANTILE INTUSSUSCEPTION SUCCESSFULLY TREATED BY LAPAROTOMY. (GROUP NO. 4.)

CASE 1.—Mr. Marsh reported to the Royal Medical and Chirurgical Society at a meeting held on Dec. 14th, 1875,[65] a case of intussusception occurring in a male infant, aged six months, who came under observation on the first day of acute illness, giving a history of thirteen days of previous indisposition. Examination revealed an abdominal tumour, and there existed a protrusion from the anal orifice. Enemata of air and water were employed without success. A few hours later Mr. Marsh found the infant collapsed. Laparotomy was performed, and the invaginated bowel was readily reduced. Convalescence was uneventful.

CASE 2.—Dr. Henry B. Sands records[66] a case of intussusception of the ileo-cæcal variety occurring in a female infant, aged six months, who came under observation twelve hours after the onset. The infant was collapsed. Abdominal and rectal palpation revealed a tumour. Reduction of the invaginated bowel was first attempted by the fingers, by enemata, by the long rectal tube, by inflation, and again by enemata, and finally, as the tumour persisted in reappearing, abdominal section was resorted to. The invaginated portion of bowel was reduced with difficulty. The bowels moved two days later, and convalescence was uneventful.

CASE 3.—Mr. R. J. Godlee reports[67] a case of intussusception of the ileo-cæcal variety occurring during 1881 in an infant, aged nine months, who came under observation on the fourth day, at which time the bowel protruded from the anal orifice. The pulse-rate was 200. Inflation with air and water was first tried, after the infant had been inverted, but proved unsuccessful. Laparotomy was performed, the invaginated portion of bowel was readily reduced, and recovery ensued.

CASE 4.—Dr. Snowball records a case of intussusception of the ileo-cæcal variety occurring in an infant, aged eight months, who came under observation on the first day. Opiates and enemata having been tried unsuccessfully laparotomy was performed, and the invaginated bowel was reduced without difficulty, but the constriction was too tight to have admitted of its reduction by the enema. Convalescence was uneventful.

CASE 5.—Dr. Howitt, in a paper read before the American Association of Obstetricians and Gynæcologists in 1894, records a case of intussusception of the ileo-cæcal variety occurring during 1888 in a male infant, aged three months, who came under observation on the second day of acute illness. Abdominal palpation revealed a tumour. Cathartics had been given, aggravating all the symptoms. Under chloroform narcosis, and with the pelvis elevated, an enema was administered. When a little more than a pint had been injected the infant suddenly ceased breathing, and was resuscitated with difficulty. As the tumour had only been partially reduced by the enema laparotomy was performed. The tumour was reduced with some difficulty. The cæcum and ascending colon gave evidence of having recently been involved in the invagination. Two hours later the bowels moved, and the convalescence was uneventful.

CASE 6.—The University College Hospital records[68] a case of intussusception of the ileo-cæcal variety occurring during 1889 in a female infant, aged five months, who came under observation on the second day. Abdominal palpation under chloroform narcosis revealed a tumour. Enemata were tried

[56] Ibid., vol. xxviii., p. 111.
[57] Ibid.
[58] THE LANCET, Jan. 9th, 1892.
[59] THE LANCET, Nov. 19th, 1892.
[60] Bristol Medico-Chirurgical Journal, 1894, p. 6.
[61] Annals of Surgery, vol. xx., p. 419.
[62] Brit. Med. Jour., vol. ii., 1894, p. 1237.
[63] Annals of Surgery, vol. xx., pp. 418, 419.
[64] New York Medical Record, vol. i., 1895, p. 475.
[65] THE LANCET, Dec. 18th, 1875.
[66] New York Medical Journal, 1877, vol. xxv., p. 561.
[67] Transactions of the Clinical Society, vol. xvi., p. 67.
[68] Brit. Med. Jour., vol. i., 1894, p. 247.

unsuccessfully. Laparotomy was performed, and the invagination was easily reduced. Convalescence was uneventful.

CASE 7.—Dr. Frederick Kammerer records[69] a case of intussusception of the ileo-cæcal variety occurring during 1889 in an infant, aged six months, who came under observation sixty hours after the onset. The infant was narcotised with chloroform, inverted, and an enema administered under strong pressure, but without result. Laparotomy was performed, and the invaginated portion of bowel was easily reduced. Recovery resulted.

CASE 8.—Sir William Savory and Mr. Marsh record[70] a case of intussusception occurring during 1890 in an infant, aged nine months, who came under observation on the second day. Abdominal palpation revealed a tumour. Laparotomy was performed, and the invaginated portion of gut was easily reduced. During the night following the operation a stool was passed which did not contain blood. Convalescence was uneventful.

CASE 9.—Mr. Paul Bush[71] records a case of intussusception occurring in an infant, aged four months, who came under observation on the second day (May 21st, 1890). Enemata had been administered without result. Under chloroform narcosis laparotomy was performed. The invagination was of the ileo-cæcal variety and was easily reduced. The patient's recovery was uneventful.

CASE 10.—Macewen records[72] a case of intussusception of the colic variety occurring during 1891 in an infant, aged nine months. When first seen the child was collapsed. Laparotomy was performed, and the invagination was with difficulty reduced, and in making the reduction the peritoneal coat of the gut was injured. Recovery ensued, and three months later the infant was shown in good health.

CASE 11.—Mr. Pollard records[73] a case of the ileo-cæcal intussusception occurring in an infant, aged six months, who came under observation on the first day. Abdominal palpation revealed a tumour. Enemata repeated at intervals were given (with a head varying from two to three feet) unsuccessfully, as the tumour kept re-appearing after short intervals. Laparotomy was performed, and the tumour was withdrawn. It seemed to consist only of the swollen ileo-cæcal valve, the intussusception having possibly been reduced by the enemata. Convalescence was uneventful.

CASE 12.—Mr. Barker records[74] a case of intussusception of the enteric variety occurring during 1893 in a female infant, aged seven months, who came under observation thirty-six hours after the onset. Abdominal palpation revealed a tumour. Enemata combined with manipulation having failed to effect reduction laparotomy was performed, and the invaginated bowel, although strangulated, was easily reduced by pressure from below. Recovery followed the operation.

CASE 13.—Mr. Verrall records[75] a case of intussusception of the ileo-cæcal variety occurring during 1894 in a male infant, aged six months, who came under observation on the first day of the acute attack. Abdominal palpation revealed a tumour. Under anæsthesia an enema of eight ounces of water was administered, the elevation of the reservoir being 2ft. This procedure had no effect on the tumour. Laparotomy was performed, and the invagination was reduced with difficulty. The bowels moved naturally the succeeding day, and the infant recovered.

CASE 14.—Dr. Beatley and Mr. Ridley record[76] a case of intussusception of the ileo-cæcal variety occurring during 1893 in an infant, aged eleven months. When the child first came under observation it was stated that the infant's bowels had been deranged for eleven days. Abdominal palpation revealed a tumour. Under chloroform narcosis enemata had been given at frequent intervals, but without result, and many hours of valuable time were thus lost. Laparotomy was performed. The tumour was reached with difficulty owing to the intestinal distension, but was easily reduced. Before the intestines could be returned within the abdominal cavity they had to be incised to allow the gas to escape. The bowels moved on the second day after the operation. The convalescence was retarded by the occurrence of a persistent diarrhœa.

[69] New York Medical Record, vol. i., 1890, p. 113.
[70] St. Bartholomew's Hospital Reports, 1892, vol. xxviii., p. 110.
[71] Bristol Medico-Chirurgical Journal, 1894, p. 6.
[72] Glasgow Medical Journal, 1892, p. 276.
[73] THE LANCET, Oct. 15th, 1892.
[74] Brit. Med. Jour., vol. i., 1894, p. 345.
[75] Ibid., vol ii., 1893, p. 1375.
[76] Ibid., vol. i., 1894, p. 911.

CASE 15.—Mr. Lockwood records[77] a case of intussusception occurring in a male infant, aged eight months, who came under observation twenty-eight hours after the onset. Enemata were unsuccessfully tried under chloroform narcosis. The first consisted of ten ounces of water with a head of 2½ ft., and the second of twelve ounces with a head of 3 ft. Laparotomy was performed. The time required for the administration of the enemata and the performance of the laparotomy was thirty-five minutes.

CASE 16.—Mr. Barker reports[78] a case of intussusception occurring in a male infant, aged four months, who came under observation during 1894 on the second day. Abdominal palpation revealed a tumour. The infant's general condition being bad enemata were omitted, laparotomy was performed, and the invaginated bowel pressed out of the intussuscipiens. This manipulation injured the peritoneal coat in several places. The cæcum was darkly congested, swollen, and devoid of polish. The operation was followed by little shock, and the bowels moved several times during the night, each movement containing less blood. Convalescence was uneventful.

CASE 17.—Dr. Ainsley records[79] a case of ileo-cæcal intussusception occurring in a male infant, aged eight months, who came under observation on the first day. When seen the infant was collapsed. Abdominal and rectal palpation revealed a tumour. Inflation was unsuccessfully tried under chloroform narcosis, six and a half hours after the onset laparotomy was performed, and the invagination reduced. The time required for the operation was forty minutes. Commenting on this case Dr. Ainsley said: "The difficulty in unravelling the bowel, as well as its congested and œdematous condition, make us believe that had the operation been postponed even for a few hours the chances of success would have been very seriously jeopardised. I am also persuaded that prolonged inflation or injection of water could have done nothing but harm."

CASE 18.—Mr. Pollard records[80] a case of intussusception of the ileo-cæcal variety occurring in a female infant, aged seven months, who came under observation on the first day. Rectal and abdominal palpation revealed a tumour. The dejections had a gangrenous odour. Laparotomy was at once performed. The invaginated bowel was reduced with some difficulty. The infant's bowels acted naturally twenty hours later, and convalescence was uneventful.

CASE 19.—Mr. A. E. J. Barker records[81] a case of intussusception occurring in a male infant, aged five months, who came under observation during 1894. Enemata were administered with apparent success, as the tumour disappeared, but it soon returned. Laparotomy was performed and the invagination was reduced. Recovery followed the operation.

CASE 20.—Dr. Roberts records[82] a case of intussusception of the ileo-cæcal variety occurring in an infant, aged nine months, who came under observation on the fourth day. Enemata were first tried. Then laparotomy was performed and the invagination was easily reduced. The time occupied by the operation was twenty-five minutes. The infant's convalescence was uneventful.

CASE 21.—Dr. Howitt, in a paper read before the American Association of Obstetricians and Gynæcologists, 1894, records a case of intussusception of the ileo-cæcal variety occurring in a male infant, aged six months, who came under observation on the second day. Cathartics and enemata had previously been unsuccessfully employed, as was Senn's plan of rectal insufflation with hydrogen gas. The infant's condition was bad. Laparotomy was performed, and the invaginated gut was difficult of reduction. The infant's bowels moved the same evening, and his convalescence was uneventful.

REMARKS.

The total number of cases of infantile intussusception collected and reported in this paper is 103. Of these, nearly 50 per cent. occurred during the fourth, fifth, and sixth months, and in nearly equal proportions. 75·4 per cent. of the cases occurred in males, and 89 per cent. of the cases were of the ileo-cæcal variety. Pritchard in his paper on Intussusception called attention to the probable part played by external violence in the causation of this disorder during

[77] THE LANCET, June 3rd, 1893.
[78] Brit. Med. Jour., vol. ii., 1894, p. 1237.
[79] THE LANCET, May 19th, 1894.
[80] THE LANCET, Feb. 24th, 1894.
[81] Brit. Med. Jour., vol. i., 1894, p. 345.
[82] Philadelphia Medical and Surgical Reporter, 1894, p. 428.

early life, particularly the careless manner in which infants are picked up and doubled over the arm of those caring for them, thereby injuring and causing a temporary paralysis of some portion of the intestinal canal. Jacobi has also called attention to this matter, particularly to the way in which infants are violently jumped up and down to quiet their cry. This seems to have been the prime factor in the causation of the invagination in my case. The age during which the infant is most liable to be affected by this disorder seems to substantiate these views. In one case the invagination was caused by an intestinal tumour. In these cases there seems to be nothing of unusual interest in the symptomatology to record. The disorder manifests itself by means of a sudden onset of severe abdominal pain, followed by vomiting and the passage of stools containing blood and mucus. Tenesmus was present to a marked degree only in those cases where the gut protruded from the anal orifice or where the tumour was down in the rectum. The symptoms varied in intensity in the usual manner, in direct proportion to the degree of constriction the bowel was subjected to, as indicated by the character of the pain and the amount of blood passed from the anus. The sign of the disorder, an abdominal tumour, was seldom absent, as was to be expected in such a large proportion of cases of the ileo-cæcal variety. Several of the reporters call attention to the necessity in all suspected cases of this trouble of making a conjoined abdominal and rectal examination, for in some instances a tumour was revealed by this means after abdominal or rectal palpation alone had failed to discover it. A protruding anal tumour occurred in the usual proportion—about 5 per cent. of the cases. Cure by sloughing, which is exceedingly rare in these cases, was met with twice—in Beeston's case and in one recorded by Mr. Cripps in the *St. Bartholomew's Hospital Reports* for 1892, of which a few particulars will here be given, it not being included in the collection. The case occurred during 1882 in a female child, aged three months, who came under observation on the fourteenth day with a gangrenous mass of gut protruding from the anus, a portion of which was removed. The rest sloughed off and the patient recovered. Thirty-nine of the cases were treated only by means of inflation or enemata, or both. Of these sixteen, or 41 per cent., recovered. The average hour after the onset when the treatment began was the forty-first. The histories of these cases are so deficient as to the details of the quantity of fluid or the amount of pressure employed that no deductions can be drawn in regard to these points from this group. In two cases eight ounces of water were used; in two cases one pint; in two cases one quart with a head of from three to four feet; and in one case three quarts under a head of five feet was reported as having been the amount injected into the intestinal canal of an infant seven and a half months of age. In one case nine enemata were required to bring about a permanent reduction of the invagination, as evidenced by the disappearance of the tumour and the subsidence of the symptoms. Chloroform narcosis was employed in three cases while the distension of the bowel was being effected. The cases of this group which terminated fatally were twenty-three in number, a mortality of 59 per cent. The average age of the infants was about five months. The average hour following the onset when treatment was begun was the sixty-ninth. In one case while the enema was being administered under chloroform narcosis, and in the inverted position, the infant vomited, inspired the vomited material, and died. In several cases collapse followed the administration of the enema, and in nearly all cases there was the same story of the inefficiency and uncertainty of the method, the tumour disappearing only to return after a short interval, the treatment being repeated again and again, the occasional repeated administration of chloroform, and alternating injections of air or water combined with massage, often roughly applied, till finally death mercifully came to the infant's relief. In all of these cases where notes of a necropsy were found the same tale was told of gangrenous, unreduced, invaginated bowel; invaginated bowel easily reduced by internal manipulation or traction; or bowel lacerated as a result of the violence caused by the over-distension of the diseased intestine. In one instance the gut was found to have become gangrenous twenty-eight hours after the first onset.

If all the cases are counted in which intestinal distension was practised to reduce the invaginated bowel, some of which cases were afterwards treated by abdominal section, it will be found that their number is seventy-one. Of this number failure to effect reduction occurred in fifty-three instances, or 75·4 per cent., which percentage would have represented the mortality of this method of treatment had not other means been afterwards tried, taking them out of this category. These figures approximate closely those given by Hare as the percentage of mortality following this method of treatment. In one instance where laparotomy was performed after enemata had apparently failed to effect a reduction, as evidenced by a continuance of the symptoms, it was thought that the swollen ileo-cæcal valve had, after the reduction of the invaginated bowel, simulated the tumour; and in another case it was supposed that the invagination had been reduced by the distension, but that the bowel had become paralysed and had been unable to recover itself. While the experiments of Forrest, Curtiss, and others, prove that there is little or no danger of injuring healthy infantile intestine by a hydrostatic pressure of six pounds to the square inch, the experiments of Mortimer and Mole, and the practical experience set forth in this paper, demonstrate conclusively that the conditions are very much altered when one has to do with a portion of gut that has been severely constricted, even for a few hours. Battey and Mole have proved by their experiments that water under a moderate pressure can, when no obstructions exist, be made to pass through the ileo-cæcal valve, and Mole has proved that one and a half pints of water injected under a pressure of one and a third pounds to the square inch into an infantile colon will fully distend it, and that it will pass the valve. Therefore it would appear that if it is desired to treat a case of infantile intussusception by means of intestinal distension (which I freely admit after a careful study of this subject, notwithstanding the fact that the only case which has come under my personal observation was successfully treated by enemata, I would be unwilling to employ) at least one and a half pints of tepid saline solution (one teaspoonful of salt to the quart) should be placed in a reservoir which is not to be elevated above three feet; and if this is not successful after one trial the method should be abandoned and other means to effect a reduction employed. If it is thought that reduction has occurred under this method, as evidenced by the apparent disappearance of the tumour, the infant should be placed in his crib and quieted by other means than by opiates or motion, to the end that if reduction has not really been effected the effect may be made manifest by the symptoms at the earliest possible moment, so that other treatment may be attempted while the chances of a successful outcome, though diminished, are not absolutely gone. It is well to recall the fact that in those cases which were successfully treated by enemata the average hour after the onset at which treatment was begun was the forty-first, and in those cases which terminated fatally it was the sixty-ninth.

Mr. Mortimer, in the course of a paper entitled, "On the Treatment of Intussusception by Injection or Inflation and its Dangers,"[83] said "that in his opinion the chief advantage of this method of treatment lay in the slight parental opposition to its employment." In alluding to the objections of this method he said: "A serious objection to the operation (enema) is that the conditions under which it is performed can only be roughly guessed at. An invagination of a fairly healthy intestine may at one time remain unreduced, when a little more pressure would have completely unfolded it, whilst at another time a very slight force may be enough to cause rupture. There is always afterwards a deceptive lull of some hours due to effects of shock, to the anæsthetic, and cessation of feeding, as well as to the opium which is usually given. Such delay may so alter the general and local conditions as to render hopeless any further procedure. It is also true that an experienced operator may blindly do as much damage as the merest tyro. I need not dwell on the obvious value of being able to feel and see what one has to deal with both as regards the intussusception and the various complications which may accompany it. There is seldom hesitation in performing an operation, perhaps a serious one, in the most unfavourable cases, say, of ruptured aneurysm or obstructed labour, or in ascribing a fatal ending less to the operation than to the condition which necessitated it. To this class acute intussusception in the late stage belongs." In the course of the discussion which followed the report of Mr. Mortimer's case of intussusception unsuccessfully treated by enemata Mr. Bryant

[83] THE LANCET, May 23rd, 1891.

said: "In my opinion under all circumstances the treatment by intestinal distension is dangerous, although successful cases may be occasionally recorded, and it is only justifiable within the first three days, and in cases not presenting symptoms of acute strangulation." The speaker also considered manipulations through the abdominal wall during the administration of enemata as being dangerous. Mr. Pritchard, in the course of his paper entitled "Intussusception,"[84] said: "I think a child would stand a far better chance of getting well after an abdominal section and the disentangling of the invagination by the fingers than by the influx of water, if the irrigator had to be elevated higher than three feet to bring about a reduction"; and, finally, Dr. Charles K. Briddon, surgeon to the Presbyterian Hospital, New York, in a recent communication to myself, said: "From what I have seen of the cases brought into hospital *in extremis* and the great difficulty of reducing the parts at that time, I should judge the use of intestinal enemas as *simply trifling* with a very grave condition, only to be combated by the institution of radical measures at the outset."

The history of the treatment of infantile intussusception by the method of intestinal distension, by either air or water, as evidenced by the testimony which has been presented, is certainly a dark page in that of our science. It is a story of empirical, rather than scientific, endeavour, one of hope deferred, of uncertainty, of prolonged torture none the less cruel because it was performed in all kindness and was generally considered to be the gentlest method of dealing with the disorder, and finally of a mortality of 75 per cent of disaster. Laparotomy was performed in this group of cases sixty-four times for the relief of infantile intussusception. It resulted successfully in twenty-one, or in 32·8 per cent., of the cases operated upon. The average age of these infants was about six and a half months. The average hour from the onset till the time of operation was the forty-fourth. In seventeen of the cases inflation and enemata, or both, had previously been tried without success. In eight cases the invaginated bowel was readily reduced, and in ten cases it was reduced with difficulty. In three of the histories nothing was stated regarding this point. The length of time required for the performance of the operation was in one instance stated to be eight minutes, and in another thirty-five minutes, which latter included the administration of an enema. Laparotomy was followed by death in forty-three of the cases, giving a mortality of 67·2 per cent. The average age of these patients was about five months, the youngest upon whom enterectomy was performed being only three days old. The patient lived six days after, probably dying from inanition, as the operator opened the first piece of bowel which presented itself in the wound. If these cases are subtracted from our list of unsuccessful abdominal sections in which either the operation was abandoned, the bowel incised and an artificial anus made or resected, and an anastomosis effected, we shall have 45 cases, of which number only 24 resulted fatally, reducing the mortality to 53·4 per cent. If we count only the operations, successful and unsuccessful, that have been performed since the perfected technique of abdominal surgery has become generally known—say, since 1889—and throwing out, as before, the cases in which the operation has not been completed, the bowel incised or excised, we have a total of 18 cases, of which 14 were successful and 4 were unsuccessful, giving a still lower percentage of mortality, or 22·2 per cent., which I believe is a fair estimate of the risk to-day of abdominal section performed on a young infant for the relief of this disorder if performed within the first forty-eight hours of the onset. It would seem that if an infant suffering from this disorder were first seen in collapse it would be wise before attempting the operation to stimulate the infant and, if the child responded, to proceed, otherwise it would be useless to do so. The operators in that case have almost invariably employed the median incision satisfactorily. The best method for reducing the invaginated portion of bowel seems to be that wherein the tumour is encircled below its apex by the finger and thumb, while the intussuscipiens or sheath is held a few inches lower down, the apex of the tumour being pushed in an upward direction. Traction from above the tumour should not be employed. If, however, the tumour proves to be irreducible (although, so far as I have knowledge, there is no recorded case of intestinal resection or an artificial anus in an infant under twelve months of age which has proved successful), it is my belief that the method devised by the late Professor H. Widenham Maunsell is the best that has been devised for treating this most unfortunate complication caused by delay.

Disastrous as the treatment of infantile intussusception by means of intestinal distension has already proved to be, the results obtained from 1828 to 1889, when abdominal section was finally resorted to, seem to have been even more so, giving as it did a higher percentage of mortality, or 84 per cent., as against 75·4 per cent. But it must be borne in mind that it was always a last resort, only employed after the little patient had become collapsed by days of severe pain, inability to take and retain food, persistent, often hourly, torture by inversion, the administration of anæsthetics, enemata of air and water, and massage, to which not unfrequently was added the so-called long rectal tube. Nothing more surely could be devised to unfit an infant or adult to withstand the nervous shock which must necessarily accompany the administration of an anæsthetic, the opening of the peritoneal cavity, and the manipulations of the intestines. As one case of section proved unsuccessful, and its result was reported, it almost certainly added danger to the next case that came under the surgeon's care. In an editorial comment in THE LANCET on a case of intussusception treated by enemata, which resulted fatally, it was said:[85] "It is true that the invagination can always be reduced—at all events in the early stages of the disease—by the operation of laparotomy, but this operation is attended by such a large percentage of mortality when undertaken in infants that the surgeon shrinks from performing it until all other means have been tried and have failed." Mr. Lawson Knaggs, in the course of an able article entitled, "Resection for Gangrenous and Irreducible Intussusception,"[86] said: "This waiting policy, this surgery of hope, has so far been a dismal failure, nor should we forget that in all cases that last chance is far too poor to be relied upon for permanent success, and that in infants it practically does not exist." Rydygier, of Cracow, in discussing intestinal invagination at the last meeting of the German Surgical Congress, held in Berlin during April, 1895, is reported to have said: "The cases are usually treated too long by internal remedies, and accordingly come too late to the surgeon. The mortality is therefore very high—75 per cent.—especially in acute cases." Further testimony or argument would seem to be unnecessary, and we must at least begin to realise the important part played by delay in these cases, as it has in all other forms of intra-abdominal disease, in affecting the prognosis unfavourably. If by this clinical demonstration of the disease, and of the results of its treatment from 1828 to 1895, the general profession and the laity could be impressed with the fact that acute intussusception is in reality a form of strangulated hernia, that the sub-acute variety is an irreducible hernia, that enemata are far from being devoid of danger in their administration, that abdominal section performed under modern conditions and during the first forty-eight hours of the disorder, with a chance of success represented by 78 per cent.—which would speedily rise to 90 per cent. as the cases came more frequently under operation during the first twenty-four hours—it would not be long before we should come to look upon the treatment of this disease by enemata of air and water much as we do to-day upon the pukes, purges, doses of metallic mercury, of gold and silver balls, of mixtures of bird-shot and olive oil, and blood-letting, which were soberly employed by good men not so many years ago for the relief of this distressing disorder, made more painful by reason of the heroic treatment considered necessary for its relief. With the light turned fully upon what modern surgery has already accomplished in this direction, it is a safe prediction that before the dawn of the twentieth century it will be generally acknowledged that our science has fully and finally triumphed over another of her malignant foes—infantile intussusception.

New York.

[84] Bristol Medico-Chirurgical Journal, 1894, p. 7.

[85] THE LANCET, June 13th, 1891, p. 1312.

[86] THE LANCET, June 11th, 1887.

ABERDEEN DEPUTATION TO LEEDS SANITARY CONGRESS. — On behalf of the Aberdeen Public Health Committee Mr. John Robertson, L.R.C.P., L.R.C.S. Edin., Mr. A. T. Gordon Beveridge, M.B. Aberd., Professor Matthew Hay, M.D. Edin., medical officer of health, and Mr. K. Cameron, sanitary inspector, have been appointed to attend the Congress of the Sanitary Institute at Leeds, Sept. 14th to 18th.

THE OPERATIVE TREATMENT OF DISPLACEMENT OF THE UTERUS.[1]

BY J. CURTIS WEBB, M.A., M.B., B.C. CANTAB.,
LATE HOUSE ACCOUCHEUR, KING'S COLLEGE HOSPITAL.

IN an article by Dr. Martin, of Berlin, on Anterior Colpotomy[2] he acknowledges his indebtedness to Dr. Dührssen as the originator of the operation of anterior vaginal fixation; but the operation described is not the Dührssen procedure, but a modification, and, I venture to think, an improvement thereof, which was worked out by Dr. Mackenrodt, at that time Dr. Martin's assistant. Having been for some years now the head of a clinic of his own in Berlin Dr. Mackenrodt, perceiving the great value of the operation in the treatment of the various forms of uterine displacement, has spent much labour and time in perfecting it, and I should like to express my gratitude to him for permission to publish his work in England, and also for his kindness in giving me every possible facility for working in his clinic on the two occasions on which I have visited Berlin.

The operation of vaginal fixation.—Dührssen, of Berlin, claims to be the originator of the operation of vaginal fixation in its present form, and I will therefore describe his method of procedure first, and will then discuss the important modifications introduced by Dr. Mackenrodt. I must acknowledge my indebtedness to Dr. Dührssen for his kindness in supplying me with the very full account of his operation and its result in the shape of a paper read by him before the Gynæcological Society of Vienna in the early part of 1895. He operates as follows: Having pulled the anterior lip of the cervix down to the vulva with a volsellum he curettes the uterus for the endometritis, which nearly always exists in displacements of any duration, and if the cervix is much hypertrophied he performs a low amputation, as a large cervix tends to prevent the organ remaining in the anteflexed and anteverted position in which his operation fixes it. An assistant now holds the volsellum that is drawing down the cervix, and the operator makes a transverse incision 1½ cm. long over the insertion of the anterior vaginal wall into the cervix, the upper lip of the wound is drawn upwards with a volsellum, and the incision is prolonged on each side by 1 cm. The bladder is now separated from the anterior vaginal wall and uterus by the finger inserted through the incision, and is kept out of the way during the rest of the operation by an anterior retractor. The utero-vesical fold of peritoneum is seized with a Spencer Wells' forceps and drawn down. It is opened by a sagittal incision and the edges are sewn to the edges of the vaginal wound with catgut. The body of the uterus is now drawn forward either by inserting a stout steel sound with a considerable curve through the os or by fixing a volsellum into the anterior wall as high up as can be reached, pulling that down, and then fixing another one higher up, pulling that down, and so on until the fundus is reached and drawn out of the original incision. The posterior wall of the organ can now be examined with the finger, and any adhesions torn through or burnt with a thermo-cautery; the ovaries and tubes can also be drawn out and inspected and removed if necessary; and if there be any myomata on the body of the uterus they can be enucleated. Two *silkworm* gut stitches are now passed in through the edges of the incision in the anterior vaginal wall, deep through the substance of the fundus and out through the other edge of the vaginal incision. Before tying them the vaginal incision with the attached edges of the peritoneal cut is closed by a continuous catgut suture. The cervix is now loosed from the volsellum holding it down and pushed up to its proper position, and the silkworm stitches are then tied. The vagina is packed with iodoform gauze, and the operation is complete. Dr. Dührssen says that if there are no myomata or tubal or ovarian disease to be treated he usually completes the operation in from five to seven minutes. There are two dangers to be avoided—viz., cutting one or both ureters or wounding the bladder. The first can easily occur if the initial transverse incision be made a little too long, as they pass close along the sides of the cervix before turning up to enter the trigone. The bladder was wounded only once by Dr. Dührssen; in this case he had already performed vaginal fixation some years previously, but a relapse had occurred owing to metritis and the pressure of a myoma. The uterus was 11 cm. long; after cutting through the vaginal cicatrix he tried to free the bladder, which was somewhat strongly adherent to the cervix, with the finger. In so doing he used some force as the adhesions were strong, and the bladder wall was torn and a vesico-vaginal fistula was left, which subsequently healed spontaneously. He therefore recommends that in cases where the bladder is at all firmly adherent to the cervix, as is the case in a repeated operation, the adhesions be cut through with scissors, keeping the blades very close to the uterus.

In the *Archiv für Gynäkologie*, 1894, Dr. Dührssen publishes statistics of 197 cases operated upon with one death—i.e., a mortality of about 0·5 per cent. In 4 cases the operation was started and then had to be replaced by hysterectomy; 1 died after operation. Of the remaining 192 cases there are 150 cures, varying from a few months to three years. In 12 cases, after relapse had occurred, the operation was repeated. Even in counting these 12 as failures there have been but 42 relapses, of which nearly all occurred in the first nine months and Dr. Dührssen concludes, therefore, that if a cure lasts nine months, it will probably be permanent. To sum up, then, out of 192 cases 42 have failed, leaving 150 successes, or about 77 per cent. In a communication I received from Dr. Dührssen in October, 1895, he states that in the last year and a half he has performed from 120 to 130 cases of vaginal fixation, among which was the one death referred to above and one relapse in the case of a very large uterus with several myomata, which, in spite of enucleation of the myomata, relapsed soon after the operation. All the others have done well, and there has been no relapse, and the patients have been largely or entirely relieved of their symptoms. This considerably improves the statistics I have given.

The modifications introduced by Dr. Mackenrodt in his vaginal fixation were to avoid any risk of cutting the ureters, to make the ultimate position of the uterus not so sharply anteflexed, and to employ absorbent catgut in place of the non-absorbent silkworm gut. His procedure is as follows. Having first curetted the interior of the uterus, and, if necessary, carried out an amputation of the cervix, he draws down the cervix to the vulva with a volsellum, which an assistant holds; another volsellum is now fixed in the mucous membrane of the anterior vaginal wall, about half an inch below the meatus of the urethra. By drawing on the upper and lower volsella, the anterior vaginal wall is everted and put on the stretch. A longitudinal incision is now made from one volsellum to the other, just through the mucous membrane, which is then dissected off the bladder on each side of the incision; the vesico-vaginal septum is cut through and the bladder pushed well up with the finger and kept out of the way by a rectangular retractor. The uterus is now brought forward either by means of a sound or else by grasping it with a volsellum as high up as possible through the vaginal incision and drawing it forward. A catgut stitch is passed through the vesico-uterine fold of peritoneum and deep into the substance of the body and the ends are tied, but left long; these ends are pulled down and another stitch is passed similarly higher up, and so on till the fundus is nearly reached. The object of these stitches is to attach the vesico-uterine fold of peritoneum to the body of the uterus, and so to ultimately obtain peritoneal adhesions, and Dr. Mackenrodt insists strongly on the fundus itself not being wounded. The edges of the vaginal incision are now sewn by interrupted catgut sutures to the body of the uterus to which the peritoneum has been attached, having first, of course, cut off the long ends of the primary row of stitches. The vagina is stuffed with iodoform gauze, and the catheter usually passed for the first twenty-four hours; the patient is kept in bed about a fortnight or three weeks and then allowed to get up, and can begin light work in from a month to six weeks after the operation.

The advantages, I think, of Dr. Mackenrodt's operation are:—1. That the longitudinal incision through the anterior vaginal wall does away with any risk of cutting the ureters or large vessels, and also that, in cases where the vagina is large and lax, this longitudinal incision can be converted

[1] An abstract from a thesis for the degree of M.B. Cantab.
[2] Brit. Med. Jour., Jan. 4th, 1896.

into a rhomboidal one, and thus an anterior kolporrhaphy can be done at one and the same time as the vaginal fixation, thus strengthening the point of attachment of the uterus and curing any prolapse that may be present. 2. That by using absorbent catgut instead of non-absorbent silkworm gut, the uterus is eventually maintained in place purely by adhesions, which, in the event of subsequent pregnancy, can stretch and allow the uterus to rise out of the pelvic cavity in a normal manner. 3. That by fixing the body, and not the fundus only, the final position of the organ is not one of such extreme anteflexion as in the Dührssen operation.

In regard to the question of pregnancies following vaginal fixation both Dr. Dührssen and Dr. Mackenrodt state that after their respective operations the patients go through a normal period of pregnancy, and that no complications arise in delivery traceable to the operation. It is only right, however, to say that Dr. Mackenrodt states that he saw a case of ruptured uterus occur in a patient on whom the Dührssen operation had previously been performed, and when I was in Berlin Cæsarean section was performed on a woman who had been operated on some time before;[2] and in the out-patient department of the Charité Hospital a patient presented herself who was pregnant and on whom Dr. Dührssen had performed his vaginal fixation. Pregnancy was then about five or six months advanced; the fundus was fixed to the anterior vaginal wall; all the uterine enlargements had taken place at the expense of the posterior wall, and the cervix was drawn up quite out of reach, and, under chloroform, was found to be pointing directly backwards. The patient was sent into the hospital with a view to Cæsarean section, but I left Berlin shortly afterwards, and do not know the further history of the case. When one considers the condition of affairs maintaining after the two respective varieties of vaginal fixation, it is obvious that there is a greater possible risk after the Dührssen than after the Mackenrodt procedure, for in the former the fundus is fixed permanently by non-absorbent material (silkworm gut), and the organ is in the position of marked anteflexion with anteversion, while in the latter operation the uterus, being fixed with absorbent catgut, after a time is maintained in position only by adhesions, which can stretch with the tendency of the pregnant uterus to rise up out of the pelvic cavity, which stretching would be assisted if, as is very likely, these adhesions share in the softening of tissue that takes place in the uterus when pregnancy is in process.

Dr. Mackenrodt was originally only in the habit of opening the peritoneum when he wished to examine the tubes and ovaries for suspected disease, or to remove them if they were known to be affected and to enucleate myomata. Latterly, in case of very long-standing retroflexions or procidentia, or where the uterus from metritis or other causes was very large—in fact, in cases where there would be a more than usual tendency to relapse—he has tried opening the peritoneum, stitching the edges of the peritoneal opening to those of the incision in the anterior vaginal wall, and then sewing the body of the uterus as before. The indications which Dr. Mackenrodt gives for his operations differ from those of Dr. Dührssen in that the former operator says that where the uterus is firmly fixed by adhesions it is necessary to do a ventro-fixation, as when the uterus is pulled forward with the volsella in the tearing of the adhesions damage has been done to the broad ligaments, and even rupture of the uterine artery has occurred and total extirpation been necessary. Considering the experiences of Dr. Dührssen, however, it would seem as if, after opening the peritoneal cavity, the finger could be passed to the back of the uterus and the adhesions gently broken down to a considerable extent, and then, by bringing the organ forwards and keeping the neighbouring parts out of the way with retractors, the separation could be completed and any slight hæmorrhage checked by means of a thermo-cautery.

In the *Berliner Klinische Wochenschrift*, No. 31, 1894, Dr. Mackenrodt published the results of 75 cases of typical vaginal fixation without opening the peritoneum. Of these patients 24 have since become pregnant; there have been 13 normal labours, 2 requiring forceps, 1 artificial induction of labour for placenta prævia, 2 abortions, and 6 pregnancies, of which no accurate notes were obtainable. Of the whole 75 cases there have been 6 relapses—4 spontaneous and 2 after pregnancies. Since that publication Dr. Mackenrodt has treated 70 further cases without opening the peritoneum (of which there have been 2 cases of natural labour; 1 is now pregnant and 1 has relapsed without pregnancy), and 35 cases with opening the peritoneum, of which there has been 1 case of early delivery with turning, 1 is now pregnant, and there have been no relapses. This makes in all a total of 180 cases, of which since the operation 27 have become pregnant and have had no difficulty in the labour that might not occur to any woman, and there have been 7 relapses, or a percentage of 3·8. He has had no fatal case. In place of his original vaginal fixation Dr. Mackenrodt now largely employs a modification which he invented in October, 1895, and which he terms "vesical fixation." He commences the operation with the same longitudinal incision through the mucous membrane of the anterior vaginal wall, separates the two flaps on each side of the incision, cuts the vesico-vaginal septum, and pushes the bladder up out of the way with the finger, at the same time separating a portion of the peritoneum from the posterior surface of the bladder. There is now a fairly large pouch of peritoneum visible between the bladder and uterus. This is grasped by a volsellum and cut completely across high up, thus leaving one free edge of peritoneum on the back of the bladder and another on the front of the uterus, just below the fundus. These are sewn together with two or three catgut sutures, passing the stitches deeply into the substance of the uterus, but, of course, not entering the cavity. The free end of the vesico-vaginal septum, which normally is attached near the anterior lip of the cervix, is now sewn to the body of the uterus about the level of the internal os uteri, and the original longitudinal incision through the mucous membrane of the anterior vaginal wall is stitched with catgut. By this procedure the uterus is fixed in a normal position, being not at all anteflexed and only normally anteverted; it is freely moveable, though it cannot become retroverted (and so cannot prolapse), and only absorbent catgut being used in a short time the organ is held in its place by peritoneal adhesions alone. Since October Dr. Mackenrodt has operated thus on thirty-six patients, and so far there have been no relapses, though, of course, the time is yet too short to allow of any statistics as regards pregnancy after this procedure, though there is no reason why the results should differ from labours following the old anterior vaginal fixation.

Liverpool.

[2] Quoted by Dr Martin in Brit. Med. Jour., Jan. 4th, 1896.

ASEPTIC FOREIGN BODIES IN THE EYE AND ORBIT.

BY W. M. BEAUMONT, M.R.C.S. ENG.,
SURGEON TO THE BATH EYE INFIRMARY.

THE three following cases illustrate the tolerance with which the eye submits to injuries caused by aseptic foreign bodies.

CASE 1. *Foreign body in the vitreous removed by the electro-magnet.*—A young man, aged eighteen years, was using a chisel and mallet repairing an iron pipe when a minute particle of metal flew off and pierced his left eye. He suffered a certain amount of discomfort from photophobia, but did not present himself for treatment at the Eye Infirmary until Feb. 18th, 1897, a fortnight after the accident. The course of the foreign body could be traced by a scar nearly in the centre of the cornea, a second scar a little more internal on the anterior capsule of the lens, and a third still more internal on the posterior surface of the lens, the eye having been pierced in a slightly oblique direction. The scar on the cornea could scarcely be seen, but those of the lens were distinct and their opacity gradually shaded off in the substance of the lens. With the ophthalmoscope the foreign body was at once seen floating in the vitreous, rising and falling with every movement of the eye, and refracting light much as the crystals of cholesterin do in a case of synchysis scintillans. By oblique illumination it could be equally well observed, and when an electro-magnet was brought close to the eye the particle came forward against the posterior surface of the lens, and was held steadily in that position by the attractive force of the magnet. For obvious reasons this experiment was not frequently repeated. As the foreign body had been in the eye

for a fortnight and there was no opacity of the vitreous it was quite certain that the fragment of metal was aseptic; for unless it were sterile it could not have remained so long a time in such a soil without the development of pathogenic organisms or the formation of an enveloping capsule, Leber's and von Hippel's investigations having shown that inflammatory action in these cases is set up by septic matter introduced at the time of the accident. But apart from sepsis there were other considerations to be taken into account. Even if it did not give rise to trouble by becoming oxidised, still a foreign body freely moving about in the eye is always a source of danger. It was clearly necessary to remove it, and, considering the favourable conditions of the case, it was improbable that there was any risk to fear or difficulties to contend with in so doing. The patient was anæsthetised, and an incision made through the conjunctiva behind the ciliary region and between the insertions of the external and inferior recti muscles. One edge of the cut conjunctiva was then retracted and the sclera transfixed by a Gräfe's knife in such a manner that the wounds of the sclerotic and conjunctiva were at right angles to each other. Through the opening thus made the pointer of an electro-magnet was passed, but on withdrawing it the first time the foreign body did not accompany it. The second attempt was successful, and a minute chip of metal was brought away clinging to the pointer. At the same time there was a slight loss of vitreous. The conjunctiva was stitched up and a pad put over the closed lids to keep the eye perfectly at rest. Two days later the sutures were removed from the conjunctiva, the wound of which had quite healed, and in a few more days the patient was convalescent. An interesting point in the case was the fact that although the foreign body weighed but half a milligramme it acquired momentum sufficient to carry it through the cornea and lens. The opacities in the lens have not increased, and now, six months after the injury, his vision is $\frac{6}{12}$.

CASE 2. *Foreign body embedded in the ciliary region.*—A man, aged forty-two years, whilst working as a blacksmith, was struck by a piece of metal from the anvil on the right eye. He was seen within two hours of the accident (Jan. 27th, 1897), and a piece of iron was found buried in the ciliary region to the outer side of the corneal limbus. The pupil was occluded by, and the anterior chamber half full of, blood. The tension of the eye was slightly decreased (?). Removal of the foreign body by forceps was followed by smart hæmorrhage and the vitreous presented. The jagged wound was carefully washed out with sublimate solution (1 in 4000) and the edges of the torn conjunctiva brought together by silk sutures. The patient was kept perfectly at rest in bed for three days, by which time the blood in the anterior chamber had become absorbed and the conjunctival wound healed, but the pupil was somewhat oval in its horizontal diameter. Eventually his vision was $\frac{6}{9}$, and at no time was there any irritation of the other eye.

CASE 3 *Gunshot wound of the lower lid and orbit.*—On Nov. 25th, 1896, I was asked by Dr. W. H. Lush to see a man who had accidentally been shot the day previous. He complained of intense photophobia and there was much chemosis and hyphæmia of the right eye. The lower lid had been unmistakably perforated and the foreign body had then struck and pierced the ocular conjunctiva a few millimetres below the corneal margin. Noting the direction of the course it had taken through the lower lid to the eye in almost a straight line it seemed probable that the shot had also gone through the sclerotic. But there was one noteworthy point—namely, that the tension was increased rather than diminished. Ether having been administered a probe was passed into the wound, but would not travel far, the sinus appearing to take a downward direction, and it was not until the probe was bent semi-circularly that it would pass. Then holding it as a catheter it glided in without the slightest pressure being necessary. Turning it in any other direction it stopped at once, and it would have required some force to make a false passage. The shot had evidently struck the eye, and had then been deflected by the firmness of the sclera, and so skirted round the globe in the same way as a bullet will often travel round a rib. The probe went in 3·5 cm., but the shot could not be felt. The wound was washed out with sublimate, and gradually healed up, leaving him with V. = $\frac{6}{9}$.

In these three cases it is probable that the foreign bodies were made aseptic by heat. They all travelled with great velocity, in the first case sufficiently so to traverse cornea and lens, and in the third the lower lid and orbital tissues. In the second case the wound was a ragged and jagged one in the ciliary region, just such an one as might be expected to result in sympathetic mischief in the other eye. But at no time was there any sign of irritation in the left, and the wound itself healed quickly. There is no doubt much truth in de Wecker's statement that frequently injured eyes have not contracted sympathetic ophthalmia in consequence of the wounds, but in consequence of the operations which have been resorted to for their relief. But this risk is now minimised by Listerism, which has done so much for wounds of the ciliary region. It seems probable that the time will come when wounds in that dangerous zone will lose in some measure their evil reputation, and operations be as little dreaded there as those in that once fatal region, the peritoneum, now are by abdominal surgeons. In experiments made by Orio[1] he found that the discharge of a gun rendered shots aseptic, and if under these circumstances they entered the eye they never became encapsuled. Tornatola, in twenty-one cases of perforating wounds of the eye by shots, only saw one case of sympathetic ophthalmia, the freedom being due, he thinks, to the antiseptic treatment of the wound and to the fact that shot fired from a gun are aseptic. "In experimental shot wounds in the eyes of rabbits and guinea-pigs the eyes retained their form and tension in eight cases out of ten when the eye had been disinfected before the injury and the wound subsequently treated antiseptically. But of twenty eyes similarly injured when no such treatment was instituted, fourteen became phthisical from irido-choroiditis, five suppurated, and but one retained its normal appearance." The probability of a wound of the eye caused by a missile from a gun, or from the anvil, or by one which has in any way been raised to a great heat being aseptic is generally recognised by those whose practice constantly brings them in contact with such cases, and its recognition is of considerable importance in prognosis: in the first place, because such a wound, if kept aseptic, will more quickly heal; and in the second place, even though it be in the ciliary region, will heal with little or no risk of sympathetic mischief arising in the other eye. In Leber's well known experiments wounds of the cornea in which the foreign body was retained caused very little reaction unless they were septic; and as long ago as 1881 both he and Snellen found micrococci in the optic sheaths of eyes enucleated for causing sympathetic disease. Their examinations were confirmed but little later by Abraham, Story, and Deutschmann, and at the present day the theory holds the field that the optic nerves are the route and micro-organisms the means by which mischief is communicated to the sound eye. Leber has asserted that sympathetic ophthalmia only occurs after infectious septic inflammation of the exciting eye. If, then, the wound is an aseptic one, and can be kept so during the healing process, there should be little risk of that disease. But at the same time this fact does not justify us in leaving a foreign body in the eye when there is a reasonable hope of removing it, for any foreign body, whether of iron or of that (ocularly) still more objectionable metal, copper, be it never so aseptic, may start an inflammation; and an inflammation once started may go on to suppuration.

Bath.

SOME UNUSUAL CASES.

BY HENRY LEE, F.R.C.S. ENG.,
CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL.

(*Concluded from p. 489.*)

CASE 5.—A female hospital patient under my care was suddenly seized with violent pain in the stomach and died shortly afterwards. Upon inspection a pin was found in the vermiform appendix, the point of which had evidently fretted its way through the end of the appendix. The opening this made communicated with an abscess in the peritoneal cavity. In any similar case friction in order to relieve pain might do much harm.

CASE 6.—When the original Taplow Station was being built a workman fell some 20 ft. on his head. He made a very slow and imperfect recovery and was never quite

[1] Archives of Ophthalmology, xxvi., 163.

himself again. A pint of beer would make him appear intoxicated, and he remained deaf on one side. He was given some light work to do on the line, and was struck and killed by an engine. It was found that there had been an extensive fracture of the petrous portion of the temporal bone. A considerable part of the fracture had been smoothly and firmly united. In other parts there were intervals. There was no appearance of any callus having been thrown out. The preparation is in the museum of the Royal College of Surgeons of England.

CASE 7.—A private patient had long suffered from some irritation in passing urine, and had an instrument introduced. After this he passed a small calculus, and on one side of this there was an accurate mould of the openings of the spermatic ducts. It was placed in the museum of St. George's Hospital.

CASE 8.—In Norfolk one day I met a clergyman riding on horseback. During our conversation his horse suddenly became restive, and jumped about a good deal. Very soon after this gentleman told me that a small stone had passed from the urethra. In this case, as in the last, the calculus doubtless came from the prostate gland.

Queensborough-terrace, W.

REFLEX EPILEPSY.

BY WILFRED J. HARRIS, M.B.CANTAB., M.R.C.P.LOND.,
JUNIOR MEDICAL TUTOR, ST. MARY'S HOSPITAL; LATE SENIOR HOUSE PHYSICIAN, NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE.

EPILEPTIC fits associated reflexly with some cause such as irritation of a scar, a diseased eyeball, or disease of the nasal mucous membrane, have occasionally been met with. That is, such cases have developed an epileptogenous zone, analogous to Brown-Séquard's guinea-pigs rendered epileptic by hemisection of the spinal cord, and in some cases removal of the peripheral source of irritation has been followed by cessation of the fits. Dr. Hughlings Jackson[1] is of opinion that every patient subject to fits has an epileptogenous zone, that in every epileptic patient there is a "discharging lesion" somewhere in the brain, and that disturbance of the part of the periphery (cutaneous, visceral, &c.) most especially represented in this discharging lesion may provoke a fit. Sir W. Gowers,[2] on the other hand, states: "It is excessively rare for cutaneous irritation to excite a fit. Epileptogenic zones, analogous to those of Brown-Séquard's guinea-pigs are practically unknown." Two cases have hitherto been recorded of epileptic fits following a touch on the head—one by Dr. James Dunsmure[3] in 1874, and one by Dr. Hughlings Jackson[4] in 1887. Both these cases were in boys, and in each there was partial hemiplegia, more marked after the attacks. In the older case there was slight right hemiplegia, with temporary right-sided paralysis after the attacks. In Dr. Jackson's case the weakness was left-sided. In both fits were producible during sleep, and also touching any part of the head in either case, if the patient were unaware that he was going to be touched, produced a sudden fall or fit lasting a few seconds. Dr. Dunsmure's case was watched for eighteen years, the falls becoming less frequent after the onset of severe epileptic fits, and improvement was marked during the administration of bromides, as in Dr. Jackson's patient. In each case the attack began at the age of two and a half years, but the attacks, being so short in duration, momentary falls only, loss of consciousness during them could only be surmised, though it was probable. Through the kindness of Dr. Jackson I am enabled to give the details of another somewhat similar case which was under his care at the National Hospital for the Paralysed and Epileptic recently, though in this case there were never any unilateral symptoms or hemiplegia, nor were any fits ever produced during sleep.

A girl, aged five and a half years, was admitted to the National Hospital for the Paralysed and Epileptic on Nov. 10th, 1896. She was a seven-months' child, the labour having been natural, and no instruments used. The father was stated to have suffered from syphilis before his marriage. There were three other younger children, all healthy, with no history of epilepsy in the family. The patient had not had chorea, rheumatism, or scarlet fever. When three years old she had a series of convulsions during one morning, but had no further attacks until nine months previous to admission. One month before this attack she had a fall, striking the back of her head, and she was dazed for some time afterwards, though whether the fall was due to a fit could not be ascertained for certain. A month later she began to fall about especially in the morning, and at first always fell on the back of her head, though later she always fell forwards. Her parents said that the fits were always slight and momentary; her eyes turned up and the face sometimes twitched and she suddenly fell down, often striking her head or biting her lip. She had these attacks sometimes once only, sometimes a dozen during the day. After she had suffered from them for between two and three months her mother noticed that the fits were induced by touching her on the head, as by putting the hand on her forehead, or when smoothing back her hair, or in putting no her hat. If she was expecting a touch, no fit followed. On the day of her admission the nurse, in going to her to take off her hat, accidentally touched her head, and the child immediately fell forwards, the father remarking that that was what frequently happened. The same day, when her left cheek was suddenly touched without her expecting it she immediately fell forward, her eyes rolled up, and she foamed at the mouth, there being definite transient loss of consciousness, followed by crying. There was no weakness of any limb nor any sign of hemiplegia, and at no time were there any one-sided symptoms, as in both the previously recorded cases. The knee-jerks were normal and there was no affection of sensation. The eyes were normal and there was no affection of any cranial nerve. She was a quick, nervous child, but of uncertain temper, and her intelligence was probably below the normal. She was under observation in the hospital until March 7th of this year, and during her four months' stay she had numerous fits, only occasionally a day passing without one, though she was taking six grains of bromide of potassium three times daily during the whole time. All the fits except two were of nearly the same character, often occurring when she was sitting up in bed, and she would fall with some violence against the iron bed-rail, giving herself a black eye, or sometimes biting her lower lip, and generally crying afterwards, even if not hurt. The nurse noticed several fits induced by smoothing back her hair, and after her admission three sudden fits, momentary falls, followed by crying, were produced during the first month by suddenly tapping her on the head without her knowing the touch was coming. Touching her during her sleep never produced a fit or any sudden change of colour or alteration in respiration, as in the two cases referred to above. During the latter half of her stay in hospital no fit could be induced by sudden touches, the child seeming to become accustomed to the not infrequent testing, and the spontaneous fits were also slightly less numerous. Only two severe fits were seen, with general convulsion and cyanosis, one a fortnight after admission, and another ten weeks later. It is noteworthy that about this time the reflex fits produced by sudden touches ceased; and in Dr. Dunsmure's patient it was noticed that the sudden falls became less numerous when ordinary epileptic fits supervened.

Craven-terrace, W.

[1] Transactions of the Medical Society of London, vol. x., 1887.
[2] Manual of Diseases of the Nervous System, p. 742.
[3] Edinburgh Medical Journal, October, 1874; also quoted by Dr. Hughlings Jackson in THE LANCET, Feb. 2nd, 1895.
[4] Loc. cit.

A CASE OF CARBOLIC POISONING FROM THE APPLICATION OF A CARBOLIC COMPRESS TO THE SKIN.

BY R. CLEMENT LUCAS, B.S. LOND., F.R.C.S. ENG.,
SURGEON TO, AND LECTURER ON ANATOMY AT, GUY'S HOSPITAL.

IN THE LANCET of June 1st, 1895, I published, in conjunction with my colleague, Mr. Lane, two cases of severe carbolic poisoning caused by the absorption of the poison through the skin when applied for the purpose of disinfecting the skin previously to operation. The principal symptoms were those of collapse and coma, lasting several hours; but, severe as the symptoms were, both recovered. Since that

period it has been the custom in my wards to apply a 2 per cent. solution of lysol for the purpose of disinfecting the skin, and no untoward circumstance has followed the use of this agent. A constant change of dressers, however, occasionally causes an alteration in the routine of the wards, and this enables me to place on record another similar case to those already published, though less severe in character. My present house surgeon, Mr. R. P. Rowlands, happened to be my dresser at the time the other cases occurred, and so at once recognised the cause of the patient's illness, and to him I am indebted for very careful notes of the symptoms. It will be seen that this patient had been previously prepared with a lysol compress, but the operation had then to be postponed owing to the admission of an urgent case.

The patient, a girl, aged five years, was admitted into Lydia Ward, Guy's Hospital, on account of antero-external bending of the lower third of each tibia due to rickets. On July 15th, 1897, the left leg and foot were thoroughly washed and a lysol compress (2 per cent. solution) was applied in the morning, it being intended to perform an osteotomy in the afternoon, but owing to the admission of a case of strangulated hernia it became necessary to postpone the operation until the following day. At 11.45 A.M. on July 16th the limb was again cleansed and a compress of carbolic lotion (5 per cent. solution) was applied on lint. This was applied over the foot and the lower half of the leg. At 12.30 the child was crying lustily for her prohibited dinner, and she seemed to be quite well at that time. At 1.30 she was noticed to be lying back in her cot listless, pale, and sleepy. She gradually became worse, more drowsy and pale, until at 3 P.M. the house surgeon was called to see her. The child was then very pale, cold, clammy, and sweating profusely, especially about the head; the lips and tongue were of a peculiar dark colour, almost black, very different from ordinary cyanosis. The dark blood could also be seen through the pale skin, and added to the pallor of the latter a ghastly leaden undertint, which was very striking and led Mr. Rowlands correctly to interpret the cause of the symptoms. The patient was not absolutely comatose, as she could be roused by painful stimulation such as the use of a hypodermic syringe. She then threw her arms about for a moment before lapsing into her former limp and unconscious state. The limbs were flabby and could be dropped in any position, but were capable of movement under severe reflex irritation. The reflexes were all very dull and slow, that of the conjunctivæ was never absolutely lost, but very slow and feeble. The pupils were widely dilated and almost fixed. She passed her urine under her—a rare event for her—and she was sick several times. The pulse was feeble and running, almost imperceptible, and not to be counted at the wrist. The rate taken in the carotids was from 140 to 150. The heart's impulse was feeble, diffused, and displaced outwards, half an inch beyond the nipple line, and the cardiac sounds were muffled and tumbling in character. It was evident that there was considerable dilatation of the right side of the heart. The respirations were hurried and shallow, from 40 to 50 per minute. The temperature was 95° F. in the rectum. The compress was immediately removed and the limb washed. Hot bottles were applied and the child was wrapped in warm blankets. Ten minims of brandy were injected hypodermically at 3 P.M., and again fifteen minims at 4 P.M. About 4.30 P.M. the patient was better; the pulse was slower and stronger, and a pink flush had displaced the ghastly pallor of the cheeks. The skin was warmer. The pupils were now contracted. The patient was again sick several times, bringing up bilious-looking fluid. At 9 P.M. the temperature rose to 97°, and the coma gradually decreased, but she was not really sensible until the following morning. The skin became dry and rough towards morning, and the pupils dilated to normal. The temperature did not rise above normal at any time. She was not delirious nor did she try to get out of bed, but remained in a state of collapse. The urine passed in the night and early on the morning of the 17th was of a peculiar smoky green colour, which darkened almost to black as it became ammoniacal. The child was again cheerful, but pale and weaker. The anæmia continued several days, but otherwise she appeared well.

The symptoms present in this case very closely resemble those present in the two cases published in June, 1895—a general appearance of shock or collapse, with cold sweating skin and actual diminution of normal temperature. With this an exceedingly rapid pulse is found, imperceptible at the wrist, but counted elsewhere it was in one case 200, in a second case 150, and in the present instance from 140 to 150 per minute. Vomiting occurred at intervals, the vomit being of a pale, dusky blue appearance. Coma was more or less complete, and often there was stertorous breathing. The pupils in the present case were at first dilated, but afterwards contracted. The heart in the case now reported was found to be dilated and over-distended, so that its apex was felt external to the nipple. Dark-coloured urine was passed after some hours. Convulsive twitchings were noticed in the other cases similar to what are seen in uræmia, and the urine was for a time suppressed. With a return of warmth the coma gradually subsides, but the patient remains for a time pale, weak, and drowsy.

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ENGLISH CHOLERA.

BY R. G. STYLE, M.R.C.S. ENG.,
SURGEON TO QUEEN ADELAIDE DISPENSARY.

ON Aug. 12th, at 11 A.M., I was called to see a girl, aged seventeen years, a paper sorter by trade. On examining her I found her to be in a state of extreme collapse; the face, body, and extremities were of a leaden hue. The tongue was clean, the eyes were sunken. There was no radial pulse. The temperature was 94° F. The nails were livid and the hands were somewhat contracted. There was no abdominal tenderness or distension, the patient only complained of slight pain in the bowels; she was restless, and her countenance was peculiarly anxious-looking besides the leaden hue. The history I obtained was as follows. The previous night she had had a supper of bread, cheese, and tomatoes, and subsequently, going out for a walk, she bought and ate some fried potatoes at a fried fish shop. She went to bed at 11.30 P.M., and at 1 A.M. woke up with vomiting and had several loose evacuations. She was removed from her own bed to that of her parents, and, they state, slept quietly till 10 A.M. Shortly after this they noticed the colour of her face, and I was sent for. I administered injections of ether, and gave brandy and a diffusible stimulant mixture, ordered hot water bottles to the extremities, and a sinapism to the cardiac region. She was seen every hour till death occurred at 5.30 P.M.; she had only one stool after I saw her, which was described as frothy water. A necropsy was made twenty hours after death; rigor mortis was well developed. The brain substance was studded with ecchymoses, the sinuses were full of dark-coloured fluid blood. On opening the thorax the lungs were seen to be very collapsed, their lower edge corresponding with the fourth rib; they were congested at the bases; there were no ecchymoses. The pericardium did not contain any fluid; there were ecchymoses on it and many on the apex of the heart. The right ventricle and auricle contained clots of dark-coloured blood, typically "tarry" in character; there were ecchymoses in the right auricle; the left ventricle contained a small ante-mortem clot. The gall-bladder was full of greenish bile. The liver was normal; the spleen and both kidneys were congested. The stomach contained about a pint of reddish-coloured fluid, mostly medicine and brandy and water. The whole of the intestines, from the duodenum to the rectum, were full of a creamy-coloured, semi-flocculent, inodorous fluid. The bladder was empty. Portions of the large and small intestines and the stomach have been submitted to bacteriological examination by Dr. Klein, the result being negative; no cholera vibrio was present, but the symptoms and post-mortem evidences were so suspicious that I think I did wisely in notifying the case to the local authorities and having disinfection promptly attended to.

Cambridge-road, N.E.

CASE OF ABDOMINAL WOUND, WITH PROTRUSION OF THE ENTIRE STOMACH.

BY C. BUCHANAN HUNTER, M.B. GLASG.

THE following case may be of interest to those who concern themselves with abdominal surgery, in that the whole stomach protruded through a very small opening on the right side of the body, the result of an accident. The patient was a little girl, aged eight years, who was running on an errand for her mother, carrying a pint bottle in her right hand. She appears to have tripped and fallen forward on to the neck of the bottle, which caused a V-shaped wound at the lower part of the ribs, in a line with the right nipple, into the abdominal cavity. It was stated that immediately afterwards there was protrusion of something which had increased to more than twice the size of what it was at the time. She was brought to hospital two hours after the accident. The child was seen at once, when the entire stomach was found protruding, with a small part of the first portion of the duodenum. The stomach was very much distended with gas and quite tense. The child was suffering from shock slightly and a little pain. She was at once put under chloroform, the stomach and surrounding parts were cleansed with soap and water and mercurial lotion, and an attempt was made to return the displaced organ, without avail, which necessitated an incision being made about two inches long from the inner side of the wound towards the mesial line, through the abdominal wall; after this the stomach was replaced and the wound was closed. After completion of the stitches it was found that the dimensions of the original wound were three-quarters of an inch in one direction and half an inch in the other. The patient made a good recovery, the temperature being normal all the time of her residence in the hospital. The wound was dressed with iodoform and healed by first intention.

Secunderabad.

NOTE ON WIDAL'S REACTION IN THE INFANT CHILD OF A MOTHER WHO DURING GESTATION HAD CONTRACTED TYPHOID FEVER.

BY H. BATTY SHAW, M.B. LOND.
LATE HOUSE PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

THROUGH the courtesy of Dr. Ringer I have been enabled to forward for publication the following observations. A woman was admitted to the Yates Ward of University College Hospital on Feb. 22nd, 1897, with symptoms of typhoid fever. The diagnosis was confirmed by Widal's reaction, and during the patient's six weeks' stay in the hospital the test was repeated several times, and always with positive results. The patient was also found to be in about the fifth month of pregnancy. The illness followed the usual course and without complications. The patient was discharged on April 4th. The child was born on June 14th—i.e., a little more than four months after the mother came under observation. Unfortunately the blood was not tested until the child had reached five weeks of age owing to a misunderstanding on the part of the mother. On July 21st Widal's test was tried. The mother's blood reacted well and at once; the child's blood failed to give the least reaction, and a similar negative result was given by my own blood. In about twenty-one hours, however, both the latter specimens showed very slight clumping, the unaffected bacilli being, however, very active. On the 24th the mother's blood reacted very well in seven hours, and after the same interval of time, some clumping, though very little, was seen in the child's blood. No control experiment was made. On the 27th neither the mother's nor the child's blood gave typical reaction at once, and even after twelve hours' waiting only slight clumping was found in both specimens. At the end of twenty-one hours the reaction had not advanced, and without looking at the labels it was quite impossible to distinguish one specimen from another by the reaction which had occurred. A control experiment with the blood of a case of typhoid fever in another ward gave a distinct reaction at once. On the 30th the mother's blood reacted in a very short time and in about eight hours the clumping was most marked. With the same interval of time, the child's blood failed to react at all, nor when examined twenty-one hours later was there any reaction; a control experiment on another case of typhoid fever gave reaction readily and much quicker than the mother's blood did. Thus, out of the four sets of observations, two—those of July 21st and 30th—were in favour of the infant's blood not giving Widal's reaction. The other two experiments—July 24th and 27th—were not so definite; that of the 24th merely showed that there was slight reaction on the part of the infant's blood, not nearly so marked as in the case of the mother. In the experiment of July 27th the observation was valueless as it was found that the mother's blood did not react when the blood from a known case of typhoid fever reacted perfectly. In conclusion, I may say that the child was quite healthy and was being fed at the mother's breast.

Oban.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. GEORGE'S HOSPITAL.

A CASE OF PERSISTENT HÆMOPTYSIS IN PHTHISIS RELIEVED BY VENESECTION.

(Under the care of Dr. W. EWART.)

THE extent of the employment of venesection at the beginning of the century is only equalled by its practical disuse now that the century is drawing to its close. Yet we cannot think that a practice which was held in such high estimation by the most careful physicians can have been entirely valueless. Venesection was the recognised treatment for hæmoptysis. For instance, George Burrows writes: "The treatment of hæmoptysis, occurring as an early symptom of the development of tubercles, will not essentially differ from that recommended when it results from general plethora; we must employ general bleeding until an impression is made upon the activity of the circulation and the pulmonary hæmorrhage is arrested."[1] How venesection acts it is difficult to say; the slight increase in the coagulability of the blood and the temporary diminution of blood pressure can have but little effect.

A man, aged thirty-two years, suffering from hæmoptysis, was admitted into St. George's Hospital under the care of Dr. Ewart. Six years previously he was an in-patient suffering from pneumonia and pleurisy, and two months after leaving the hospital, and also occasionally since, he has had hæmoptysis. In December, 1896, he was admitted again into the hospital on account of the same symptom. He has never had rheumatic fever, and has had no other illness. There was no family history of tubercle. On the evening of April 15th, 1897, he coughed up about half a pint of blood and went to the hospital, and was immediately admitted. It was then noticed that the pulse was strong and tense and the patient was flushed. The hæmoptysis continued, and on the evening of the day of admission he was ordered a hypodermic injection of half a grain of morphia, ice was given him to suck, and a saline aperient was ordered. On account of the patient's condition no examination of the chest was made. On April 16th the hæmorrhage still continued, and as the bowels had not acted the saline aperient was repeated and two minims of croton oil in two ounces of castor oil were given, followed by a soap and water enema. Copious evacuations ensued, but the hæmoptysis was still severe, therefore a third of a grain of morphia was given hypodermically, and this was repeated in the evening. On auscultating the chest abundant râles were heard at the right apex, where also there was a distinct

[1] A System of Practical Medicine, edited by A. Tweedie, vol. v., p. 32

increase in the vocal fremitus. On the 17th, in the morning, the hæmoptysis was somewhat less, and the saline aperient was continued. In the afternoon suddenly a large amount of blood was coughed up, and Dr. Ewart, finding that the high tension of the pulse had not yielded to the purgatives and the morphia, and bearing in mind the favourable results reported by Dr. Huggard, of Davos, determined to bleed the patient. Accordingly eight ounces of blood were withdrawn from the arm. Immediately the patient expressed himself as feeling much easier. On the 18th there was decidedly less blood in the sputum, but the cough was very troublesome and there was much expectoration. By the 23rd the expectoration had much diminished in quantity, and no blood had been noticed in the sputum since the 21st. Except for a little blood in the sputum on the 24th there was no further hæmoptysis. The cough became much less severe, but the physical signs indicating tuberculous disease at the right apex were unaltered.

WESTERN INFIRMARY, GLASGOW.

A CASE OF EXCISION OF THE CÆCUM FOR MULTIPLE FISTULÆ, WITH USE OF MURPHY'S BUTTON; RECOVERY.

(Under the care of Dr. J. CRAWFORD RENTON.)

WHATEVER may be the verdict of posterity as to the desirability of employing Murphy's buttons in intestinal anastomosis, cases like the following conclusively demonstrate that the button is a rapid and simple method for uniting two portions of bowel. The untoward occurrences which sometimes accompany the use of the button may in time be found to be preventable, or some other method to which no objections can be raised may be devised. Dr. Renton's case is especially noteworthy on account of the long duration of the fæcal fistulæ and their rapid cure by operation.

A man, aged thirty years, was admitted to Professor McCall Anderson's wards in 1891 with a hard swelling on the right iliac region, and in the absence of Professor Buchanan the patient was seen by Dr. Renton. It was agreed that an abscess had formed, and this was opened. On the second day after the operation a free discharge of fæcal matter took place. The discharge, although diminishing, never completely stopped, and in 1892 Dr. Renton attempted to close the opening by dissecting away the infected skin and closing the opening which passed into the cæcum. This diminished the opening, but the man found it troublesome, and in 1894 Dr. Renton again tried to close it, but without success. Circumstances prevented the patient from returning until July, 1896, when it having been explained to him that Dr. Renton wished to remove the diseased portion of bowel entirely, he agreed to the operation, and entered the infirmary. Assisted by Dr. Burnside Buchanan and Dr. Walker (Professor McCall Anderson was unable to be present), Dr. Renton opened the abdomen freely, and found, on clearing away all the diseased skin, that there were several openings into the cæcum, in one direction so extensive that it was decided that it must be removed. This involved a good deal of laborious dissection, but after some trouble the diseased parts were isolated along with the appendix, which was ulcerated and adherent. Having clamped the ileum and colon with the clamp made for Dr. Renton by Messrs. Down Brothers, of London, and which is shown in the accompanying woodcut, he divided the

bowel above and below the disease. The ends of the Murphy's button were now inserted in the usual manner and joined together, the mesentery being stitched with catgut and the bowel returned to the abdominal cavity. Owing to the number of previous operations, and the amount of ulcerated skin that had to be removed, the gap to be closed was considerable. This was done successfully, and the wound has healed well, leaving very slight bulging of the abdominal wall. The patient was fed on soups and barley water, and progressed favourably (passing the button with some difficulty on the seventeenth day). He was kept at rest for six weeks, which in a serious operation such as this is of great importance. At the end of three months he commenced his work, and has continued to be quite well, so that he may now be regarded as recovered.

Remarks by Dr. RENTON.—Being a non-tuberculous ulceration of the cæcum it was a favourable case for operation by excision. Murphy's button is quickly applied, and when it passes easily supplies a most efficient means of end to end union of bowel. At the same time it is fortunate that we have several ways of uniting bowel, as each case must be treated according to circumstances. It is important when using the button to be sure that it is not too tight, as it would lead to too much gangrene of the bowel and failure of the operation. The clamp used I have found very efficient, and I have pleasure in recommending it. This patient had an attack of jaundice on each occasion that he had chloroform, which is one of the results which from time to time is met with, but he is the first patient I have had who regularly has had a distinct attack.

Reviews and Notices of Books.

Pathologie und Therapie der Perityphlitis Von Dr. ED. SONNENBURG. Dritte Auflage. Leipzig: F. C. Vogel. 1897. Preis 10 Mk. (*The Pathology and Treatment of Perityphlitis* By Dr. ED. SONNENBURG. Third edition. Leipzig: F. C. Vogel. 1897. Price 10s.)

THIS monograph, by Professor Sonnenburg, director of the Surgical Department of the Moabit Hospital at Berlin, is one of the most useful and practical that has been written upon the subject of appendicitis, which has now quite a literature of its own. The plan of the work is excellent. An introductory chapter deals with many points of interest, as, for instance, the rarity of typhlitis stercoralis as a primary condition, the author remarking that of 230 cases operated upon by him in not one was there any typhlitis proper found, although the symptoms were such as were wont to be attributed to that condition. He does, indeed, give one case where the appendix was found to be unaffected, but a portion of the cæcal wall was inflamed and thickened. This was not due to tuberculosis or syphilis, and the cause of the lesion could not be satisfactorily explained. The outcome of wide experience upon the varying conditions found at these operations is to the effect that perityphlitis is essentially a disease of the vermiform process, usually of slow progress, often extending over years, frequently spontaneously recovering, but in the great majority extending, often characterised by acute exacerbations which ultimately lead to perforation or gangrene of the part. Thus if once affected it remains a continual source of probable discomfort and danger. Yet in some cases of relapsing typhlitis the appendix does not undergo any profound disorganisation, but apart from adhesions retains the form and character of the normal structure, some thickening of the mucous membrane alone indicating the recurrent attacks of inflammation to which it has been subjected. The classification adopted by Professor Sonnenburg is simple. He divides the main conditions met with into the three groups of Appendicitis simplex, Appendicitis perforativa, and Appendicitis gangrenosa, and his experiences enable him to subdivide those groups according to the various complications that may be met with. His records of 209 cases, each of which is detailed, and in each of which an operation was performed, comprise 51 cases of the "simple" variety, all of which recurred; 132 cases of "perforation," of which 30 died, the deaths being almost wholly comprised of those cases in which there was peritonitis (general) or multiple abscesses; and, lastly, 26 cases of "gangrenous" appendicitis, 9 of which

were fatal, all those being cases of diffuse peritonitis, the 17 recoveries having only circumscribed peritoneal inflammation.

Wounds in War: the Mechanism of their Production and their Treatment. By Surgeon-Colonel W. F. STEVENSON, A.M.S., Professor of Military Surgery in the Army Medical School, Netley. London: Longmans, Green, and Co. 1897. Price 18*s*.

FOR two reasons the surgical treatment of gunshot wounds in the wars of the future will vary much from what has obtained in the past; the science of surgery has altered, and the injuries to be treated will be modified by the changes which have been made in the weapons and projectiles employed. Bearing these facts in mind, we feel that Surgeon-Colonel Stevenson's work will be welcomed by the medical officers of the Army, Navy, Reserve Forces, and Indian Medical Service, as well as by many men in civil practice who take an interest in the subject treated. It is the only volume which has appeared in this country save the second edition of Sir Thomas Longmore's work on "Gunshot Injuries" since the teachings of Lister and Pasteur have revolutionised the treatment of wounds, and we regard it as the first work on military surgery which has been published in English of real practical utility; for good as the work of Sir Thomas Longmore was considered to be in its day, and interesting as it is from a historical point of view, yet it failed to be of the great service which we hope and think the newly issued work will be, inasmuch as the treatment recommended by Longmore was almost always indefinite and general in its tenor.

A very large portion of the newly issued volume is devoted to detailed practice and particular methods. Surgeon-Colonel Stevenson's aim has clearly been to bring to the notice of his readers the treatment which will give the best results for each injury, and is based on results already attained or on the careful consideration of the different possibilities of treatment under the most modern conditions and system of practice.

The book of rather more than 400 pages is divided into fourteen chapters, a considerable portion of the first of which is devoted to the Mechanism of Projectiles, while the second treats of Wounds by Small-arm Bullets and by Large Projectiles or their Fragments. The third chapter deals with the Primary Phenomena and Symptoms accompanying Gunshot Wounds; the fourth and fifth chapters are concerned with the Treatment of Wounds in War. In succeeding sections the following subjects are considered—Gunshot Wounds of Joints; Gunshot Wounds of the Hip-joint; Gunshot Injuries of the Diaphyses of Long Bones; Wounds of the Head; Wounds and Injuries of the Chest; Wounds and Injuries of the Abdomen; Injuries of the Pelvis; and the Effects of the use of Modern Small-arms in the Wars of the Future. In connexion with the last-mentioned topic we think the War Office authorities will do well to ponder on a well-reasoned opinion of the author when he states that it is "evident that the work of collecting the wounded at the first post of surgical assistance cannot in future be performed in European armies as at present laid down by regulation." In the final chapter, which is headed "The Geneva Convention," the nine articles of the Convention are briefly and clearly set forth, and Mr. Furley's last suggestions, pointing out the lines on which organisation should proceed to enable the civil societies to amalgamate with the Army Medical Service in time of need and give their assistance, are recapitulated.

We would specially call attention to the handling of the subject of Wounds and Injuries of the Abdomen. We regard this as the best chapter of a very useful book—best, not only from the standpoint of subject matter, but also from that of literary excellence. In discussing the treatment of penetrating wounds Surgeon-Colonel Stevenson presses on the attention of his readers the grave wrong of the "expectant" plan, and the contra-indications for the administration of opium; his pages on laparotomy are clear and valuable, and the illustrations of the method of suturing perforations in the intestine and of Maunsell's method of performing excision of a portion of the gut are excellent.

The one fault which we find in the book is the tendency to repetition—a fault which may, however, perhaps be excused in a work of this nature, intended as it is for reference often under very difficult circumstances, when many cross references would be unsuitable. We can strongly recommend the book to the Service members of our profession, and we congratulate the author on the completion of the first edition of a work which we know will prove of true utility. It is thoroughly up to date as far as it is possible for such a work to be so in the absence of statistics which only a great modern war can supply, and the author clearly indicates the lines of treatment which should be attempted and followed under the varying conditions of warfare. A pocket edition will no doubt appear later. We think a copy should form a portion of the baggage of every medical officer ordered on service.

The present edition is well indexed and freely illustrated. The diagrams and illustrations are for the most part very clear, but we doubt whether the upper part of Fig. 11 will convey much information to the reader. The type, materials, and general get-up of the book are worthy of the publishing house from which it is issued.

The Diseases of Infancy and Childhood. By EMMETT HOLT, A.M., M.D. London: Henry Kimpton. 1897.

THIS work is a substantial volume of nearly eleven hundred pages and contains two hundred and four illustrations. It is confined to the diseases of children from birth to the age of seven or eight years. Questions of surgical procedure are only considered so far as they come under the notice of the physician. Pathology and morbid anatomy, on the other hand, are dealt with in more detail than is usual in such works, because, as the author points out, the morbid processes of early life receive scant attention in ordinary pathological works. The first section consists of a concise exposition of the general care of infants, their growth and development, and the peculiarities of disease at this age. The second part is confined to the diseases of the newly born. In the third, nutrition and its disorders are fully considered, scurvy and rickets being wisely here included. The remaining sections deal seriatim with the diseases of the different systems, the specific infectious diseases, and general diseases.

The chapters on nutrition are excellent. The author points out that temporary success in artificial feeding may mean ultimate failure, and that the prolonged use of predigested foods is a mistake. Sterilisation receives sufficient notice, and stress is laid on the fact that sterilised milk requires the same modification for feeding of infants as uncooked milk. The author is rather inclined to under-estimate the danger of tuberculous milk, considering it to be a good deal exaggerated. Proprietary foods receive quite sufficient attention. Malnutrition and marasmus are rather unnecessarily considered in different chapters—since their differences are in degree rather than in kind. Diarrhœal affections are classified partly according to their severity, and partly according to the supposed anatomical distribution, of their lesions. A more general description would have been shorter and equally satisfactory. The classification of laryngeal affections is good, and fully supported by the most recent results of bacteriology. The section on diphtheria embodies a careful description of the antitoxin

treatment, with its dosage, limitations, and results, and is well up to date.

As a whole the work is distinguished by a due sense of proportion; common ailments are fully considered, while rare affections receive a shorter though adequate description. Chronic bronchitis is perhaps insufficiently noticed, and the prognosis of heart disease is neither definite enough nor quite in accordance with the views held in this country. Cervical opisthotonos, again, is passed over with scanty description. The author's style is good, and the work is pleasant reading; the illustrations are as a rule excellent, and, in spite of the few trivial details to which we draw attention, the work is, in our judgment, one of the best yet published on the subject of children's diseases.

Practical and Operative Gynæcology. By J. CLARENCE WEBSTER, M.D., F.R.C.P. Edin., Fellow of the Royal Society of Edinburgh, &c. Illustrated with fifty-four figures. Edinburgh and London: Young J. Pentland. 1896

DURING the last six years the author has been engaged in the work of teaching practical obstetrics and gynæcology in the University of Edinburgh. He says, "In this book I have recorded with some degree of elaboration the gynæcological part of my instruction." There is some excellent general advice in the chapter on case-taking—e.g., "a physician may possess great knowledge regarding the pathology and treatment of diseases of women, but he will not make great headway in the practice of gynæcology unless he ever appreciates the subtleties and peculiarities of the psychical organisation of women. Delicacy, tact, patience, and judgment must be brought into employment. Thoroughness, also, must be particularly enjoined." A man must be blessed or otherwise with extraordinary self-confidence, not to say assurance, who flatters himself that he is always able to appreciate "the subtleties and peculiarities of the psychical organisation of women." Even the youngest gynæcologist of them all might be forgiven for feeling some degree of misgiving as to his certainty in this direction. Again, no exception will be taken to the following: "Finally, downright honesty should be the motto of the physician. There is no sphere in which there has been more dishonest practice, and it is not out of place to utter a strong protest again the crime practised ["practised" here strikes us as distinctly good in relation to the profession of crime] by those who, for the sake of gain, trade on the fears which naturally fill the minds of many women when their reproductive apparatus is out of order, and who elevate into an unnecessary importance conditions which are but trifling." The intention of all this is excellent, but its application is frequently a matter of difficulty. Gynæcologists are, unfortunately, no exception to the proverbial tendency to differ affecting members of our profession. We think it would be a pity not to recognise honest differences of opinion and a mistake to be too ready to impute unworthy motives to those whose views may not coincide with our own. Still there are, no doubt, some sparks of fire in the smoke of Dr. Webster's warning.

The author's teaching seems to us to be generally reliable. There are some slips of course, and a few things are omitted that we should have expected to find. Thus "deciduoma malignum" is not to be found in the index, nor does it appear to be referred to, although many observers consider it to be a sarcoma of the body of the uterus, and thus rather gynæcological than obstetric. Again, in the description of the operative treatment of fibroids, the intra-peritoneal method is not given as it should be at the present time. The ligature of the uterine arteries outside the uterus as an indispensable step of the operation is not insisted on, in fact, the technique given seems to be more or less that of the old intra-peritoneal operation which had so high a mortality. The section on antiseptics, and the methods needed to ensure asepsis, is excellent. We see that the author rather prefers alcoholic solutions of perchloride of mercury for disinfecting the hands.

Lectures on the Action of Medicines. By T. LAUDER BRUNTON, M.D. Edin., F.R.C.P. Lond., F.R.S., Physician and Lecturer on Pharmacology and Therapeutics to St. Bartholomew's Hospital. London and New York: Macmillan and Co. 1897. Pp. 673.

THESE lectures formed the course on Pharmacology and Therapeutics delivered at St. Bartholomew's Hospital during the summer session of 1896. They are intended to give a general sketch of the mode in which drugs act upon the body, and they are arranged very much in accordance with the schedule for the examination in pharmacology which was instituted by the Royal Colleges of Physicians of London and Surgeons of England, but which was abolished before any examination had actually been held. Fortunate were the students who heard that course. We have never read a book on this subject which has given us so much pleasure. Most works on drugs and their actions are useful as works of reference, but every page of Dr. Brunton's book is interesting, and we read on for the delight of doing so, gaining numerous useful hints for treatment and refreshing our knowledge of physiology as well as of pharmacology. Let us take, for example, the action of drugs on the circulation. Some physiological points are first noticed, the effect of temperature on the heart as shown by the demonstration of a frog's heart on a heated plate, and here is noted the effect of fever on the human heart. "Just as you can recover the frog's heart from the effect of high temperature, so you can, in many cases, recover the hearts of your patients from the effect of high temperature by cooling them down. ..... By cooling the patient down you cool the blood, and thus allow the circulation to go on again." Then follow some considerations on blood-pressure, and attention is drawn to the three large channels through which the blood finds its way from the arteries into the veins, stress being laid on the vessels of the muscles, which "are so large that they will allow as much blood to pass through them in a given time as both the vessels of the skin and of the vessels of the intestines together." Regulation of blood-pressure is fully described, with many useful directions as regards treatment. Next follows a short *résumé* of cardiac disease in general and then the drugs which are usually employed. Digitalis naturally holds the first position, and an exhaustive description is given of its uses and modes of action. An instructive section is that on the four active principles of digitalis, showing that one of them, digitonin, is to a great extent antagonistic to the other three. Other drugs acting on the heart are then considered, including an account of the effects of nicotine. Students with athletic tendencies will read with especial interest the remarks on "training." The mechanical treatment of chronic heart disease has considerable space devoted to it. The much-discussed "Nauheim Treatment" is favourably reviewed provided that suitable cases are chosen. Many practitioners still consider the Nauheim treatment as quackery or at least a fad; Dr. Brunton's anecdote may well be considered by those who hold these extreme views. "I was a good deal astonished a little while ago when I recommended a patient to go to Nauheim to receive a letter from the general practitioner who had been in attendance upon him, saying that the Nauheim treatment was too new to enable him to form any opinion about it, that he did not think it was any good, and therefore he advised the patient not to

go. The man in question simply knew absolutely nothing about it; he had not taken the trouble to inquire, and so he decided upon a basis of pure ignorance." We have taken the chapters on Circulation as an illustration of the general scope of the work; as much could be said in every division. We feel that we cannot speak in too high terms of the book, but cordially recommend it to practitioners of medicine and students. The former will find ample material for help and study, whilst the latter will discover in it a welcome change from the ordinary text-book, at the same time obtaining knowledge which will be useful to them throughout the whole of their professional life.

LIBRARY TABLE.

A Contribution to the History of the Respiration of Man, being the Croonian Lectures delivered before the Royal College of Physicians in 1895, with Supplementary Considerations of the Methods of Inquiry and Analytical Results. By WILLIAM MARCET, M.D. Edin., F.R.C.P. Lond., F.R.S. London: J. & A. Churchill. 1897. Price 12*s.* 6*d.*—This handsome volume comprises a study of the intimate nature of respiration, largely based on experiment. It shows the importance of a sufficient supply of oxygen to the proper and full exercise of the functions of the body, in which the tissues themselves play an essential part. The ordinary conception of the respiratory process requires some modification, since everything points to metabolism being initiated in the tissues which demand a supply of oxygen adequate for their needs rather than evolved by the oxygen conveyed in the circulating blood. Some of the most interesting facts described are those which clearly demonstrate that the exercise of so purely psychical a function as volition depends upon absorption of a sufficiency of oxygen, so that the act of volition influences the amount of respiration, and conversely the deficiency of oxygen in the atmosphere (as at high altitudes) may have a powerful restraining influence upon the exercise of the will. The lectures with the supplementary chapter on methods will no doubt be especially studied by physiologists, but the suggestive application of respiratory training, in the form of the favourite recreation of cycling, as a remedial agency in asthma deserves the attention of the practical physician.

L'Hygiène du Cycliste. Par le Docteur O. LAURENT, Professeur à l'Université de Bruxelles. Brussels: Alfred Castaigne. 1897. Pp. 119.—Dr. Laurent recommends cycling as an admirable exercise for average individuals of both sexes, but he earnestly cautions his readers against over-fatiguing themselves, against undue effort in going up hills, and against riding at an excessive speed. About nine and a-half miles (fifteen kilometres) per hour is, in his opinion, a sufficient pace for the ordinary rider. Neither children under ten years of age nor elderly men who are unaccustomed to active exercise ought to cycle; but those who have paid due attention to their physical condition will find cycling advantageous even in advanced life, and Dr. Laurent quotes the case of Dr. Tarrier, an American practitioner eighty-nine years of age, who used a tricycle when visiting his patients. Considerable space is devoted to the subject of cycling for females. In the absence of special diseases in an acute stage the exercise is recommended both to the single, the married, and mothers of families, always with the caution that it should be used in moderation. Dr. Laurent enumerates several diseases and morbid conditions which are benefited by this form of exercise, and cyclists, whether beginners or proficients, will find in this little book a large amount of useful information.

JOURNALS AND REVIEWS.

Bristol Medico-Chirurgical Journal.—The opening article in the current number of this well-known quarterly is a valuable contribution to medical biography, being an account of the life and work of the late James Greig Smith, an obituary notice of whom appeared in THE LANCET of June 5th, p. 1567. Mr. Greig Smith was editor of the *Journal* on its first appearance in 1883, and conducted it most ably until his retirement in 1892. Some idea of his literary activity and success may be formed from the fact that his large treatise on Abdominal Surgery has reached its fifth edition, while the list of his contributions to the medical journals fills three pages. Dr. P. Watson Williams has an interesting article on Paroxysmal Tachycardia, and describes two cases; one of the patients being a man, eighty-one years of age, who had suffered from occasional attacks for at least fifty-three years, and the other being a female, sixty-two years of age, whose first attack came on about six years before Dr. Williams first saw her. He considers that the disease is a neurosis of the intra-cardiac ganglia. Mr. J. Lacy Firth describes two cases in which intracranial pressure caused death by paralysing the respiratory centre in the medulla.

Scottish Medical and Surgical Journal.—The present number has ten original articles and three full-page plates. Dr. R. S. Thomson and Dr. E. L. Marsh, of the City of Glasgow Small-pox Hospital, contribute an instructive paper on the Antitoxin Treatment of Small-pox. The serum they employed was prepared and supplied by the Health Department, Brooklyn, New York, and was named "variola antitoxic serum." It was derived from calves rendered immune to cow-pox by inoculation with vaccine lymph, not with the virus derived directly from a variolous patient. Six cases of small-pox treated with this serum in October and November, 1895, are very fully described. Five of them recovered. The sixth case was one of hæmorrhagic small-pox, and proved fatal on the ninth day. The authors are of opinion "that in no single instance did the treatment as employed by us modify the disease." Numerous references to the results of other observers are given. Mr. F. M. Caird, of Edinburgh, describes a difficult operation, in which a renal tumour weighing 3½ lb. was removed by a lumbar incision. The patient made a good recovery.

Edinburgh Medical Journal.—Dr. A. E. Garrod contributes a valuable paper on the Spectroscopic Examination of the Urine. Dr. Byrom Bramwell continues his series of lectures on Aphasia. Mr. W. Bevan Lewis describes a modified sublimate method which has given him excellent results in the staining of sections of nervous tissues. Dr. J. Cunningham Bowie recommends the treatment of asthma by intra-laryngeal injections of menthol, iodine, or oil of hop dissolved in almond oil.

Dublin Journal of Medical Science.—The principal article is Sir Richard Quain's paper on the Mechanism by which the First Sound of the Heart is Produced; it was read before the Royal Society last June and appeared in THE LANCET of June 19th, 1897.

Mercy and Truth contains an interesting historical account of the mission hospital in Kashmir and of Dr. Elmslie's labours there. There are also articles on missionary work in the land of Moab and in Central China.

Le Vélo Médical.—This paper circulates among medical cyclists and is now published weekly. A recent number contains portraits of two celebrities who are well known to be partial to this exercise, namely Professor d'Arsonval, and Dr. Lucas Championnière, the latter of whom has been photographed in company with his little son and three daughters, all five mounted on bicycles.

Analytical Records
FROM
THE LANCET LABORATORY.

GENEVA (U.S.A.) MINERAL WATER.

(AGENCY: 10A, GREEN-STREET, LEICESTER-SQUARE, W.C.)

OUR analysis of this water is as follows: total solids 196 grains per gallon, of which at least 170 grains are sulphate of lime. It contains also small quantities of magnesium salts, and common salt to the extent of 4½ grains per gallon. Its total hardness exceeds that of the average London water-supply by over ten times the amount. This would condemn it, in our opinion, simply for drinking purposes, and this enormous degree of hardness is not removable on boiling. We cannot imagine upon what ground this water is offered for curative purposes. So great is the amount of calcium sulphate contained in it that it produces an immediate precipitate when mixed with alcohol. Referring to the solubility of calcium sulphate in water, we find, according to this analysis, that Geneva (U.S.A.) water is a saturated solution of this salt.

TANOCEA TEA-TONING TABLETS.

(THE TANOCEA TABLET CO., BLETCHLEY STATION.)

The composition of tanocea tablets is based upon a sound enough scientific principle, and in practice, as a matter of fact, they will be found to effect certain important improvements in the character of an infusion of tea. They are composed of gelatin and carbonate of soda, so that when placed in the teapot with a teaspoonful of leaves and the usual quantity of boiling water the first action is the rapid extraction and neutralisation of the tannin by the soda present. The solution of tannin so obtained then immediately attacks the gelatin, which renders the tannin insoluble and inert. Thus the tanocea tablet exerts a distinct softening effect on the infusion, a muddy precipitate subsiding after a time. On adding the solution of a tanocea tablet to an ordinary clear decoction a precipitate of astringent principles is at once obtained, and the clear supernatant fluid will be found to be free from all bitterness and styptic property. The restorative and stimulating principle caffeine is not affected in any way by this process, nor is the agreeable flavour of the tea altered. It is the simplest, most effectual, and least objectionable method of removing from tea those astringent substances which are so frequently a source of discomfort to many who could otherwise drink tea with pleasure and advantage. We have tried this simple device in one or two cases where ordinary tea could not be taken without marked gastric disturbance, and the results have been very satisfactory. Since the tannin is thrown out of solution as soon as it is extracted, the leaves may be allowed to infuse for a much longer time, and thus the maximum amount of stimulating principle in the infusion is ensured.

VIFERA WINE.

(R. P. GEMMEL, 49, VIRGINIA-STREET, GLASGOW.)

Two kinds of wine have been received, one red and the other white, answering respectively to ordinary Burgundy and Chablis or white Burgundy. The results of analysis were as follows: Bargundy: extractives, 2·63 per cent.; mineral matter, 0·34 per cent., containing 0·6 per cent. of iron; sugar, 0·34 per cent.; tartaric acid, 0·33 per cent.; acetic acid, 0·12 per cent.; alcohol, by weight 11·62 per cent., by volume 14·37 per cent., equal to proof spirit 25·18 per cent. Chablis: extractives, 2·62 per cent.; mineral matter, 0·42 per cent., containing 0·48 per cent. of iron; sugar, 0·34 per cent.; tartaric acid, 0·47 per cent; acetic acid, 0·16 per cent.; alcohol, by weight 11·62 per cent., by volume 14·37 per cent., equal to proof spirit 25·18 per cent. From these results it is evident that the wines were in sound condition, free from the slightest excess of objectionable acidity (especially volatile acid). They are, however, decidedly heavy in character and full-bodied. For table purposes they are best diluted. There can be little doubt of their tonic character, iron being an important constituent of the mineral matter. Both are undoubtedly pure and natural products of the grape, possessing the vinous characteristics of the rich generous wines now sent to this country by our colonies.

EXT. RADICIS PERNIONIS.

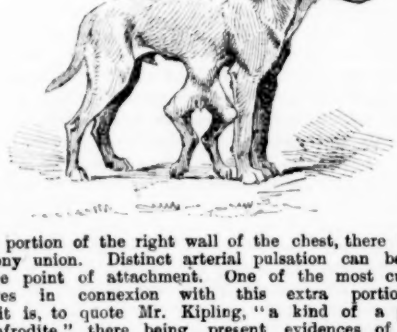
(ARTHUR AND CO., 69, BERNERS-STREET, W.)

This is described as a new preparation for the treatment of chilblains, and is stated by its makers to be "the best application that has yet been known." It is also adapted, it is said, for the treatment of itching and bruises. It proves from the results of laboratory examination to be a spirituous extract of a well-known root. On diluting with water it turns turbid, but the turbidity is removed by ether, the ether yielding on evaporation an oily residue of peculiar smell.

A POLYMELIAN CANINE MONSTROSITY.

WE have received from the editor of *Our Dogs* the following account of a curious freak of nature occurring in a puppy which has recently been brought under his notice. The animal is a mongrel puppy, about six months old, belonging to Mr. Dewhurst, of Accrington, sired by a fox terrier dog out of an Irish terrier bitch. Although in fair condition it is rather smaller in size than a fox terrier puppy of the same age.

According to the description given by Mr. W. A. Taylor, F.R.C.V.S., in *Our Dogs*, the animal has a single complete head and male trunk, with limbs perfectly formed, whilst dependent from the lower portion of the right sternal region there is an extra pair of posterior limbs and a portion of pelvis. Both these legs possess, apparently, all the bones of the hind limbs as far as and inclusive of the femur; there is no hip-joint, as the pelvis is not entire, but there is a piece of floating bone which appears to be a part of the pubic portion. The skin and hair covering the extra limbs is continuous with that forming the



lower portion of the right wall of the chest, there being no bony union. Distinct arterial pulsation can be felt at the point of attachment. One of the most curious features in connexion with this extra portion is that it is, to quote Mr. Kipling, "a kind of a giddy harumfrodite," there being present evidences of both male—a rudimentary penis without a meatus—and female generative organs. There is also a constant dribbling of urine from the female urethra, clearly indicating either the presence of a kidney or kidneys or else a communication with the urinary apparatus of the body of the animal. There is no anal outlet or trace of coccygeal bones, the tail being represented by a small fold of skin.

As a freak of nature the animal will doubtless arouse a certain amount of interest, and it is to be hoped that, should death occur, the owner will allow some scientific expert to make a post-mortem examination in order that the result may be recorded.

THE LANCET.

LONDON: SATURDAY, AUGUST 28, 1897.

THE report to the Local Government Board on the preparation and storage of glycerinated calf vaccine lymph, drawn up by Sir R. THORNE THORNE and Dr. COPEMAN, constitutes an admirable supplement to the report of the Royal Commission on Vaccination. It will be in the minds of most of those who studied this latter report at all carefully that the general trend of the recommendations of the Commissioners was that every parent who desired it should have facilities for having his or her child vaccinated with calf lymph. There were, as Sir R. THORNE THORNE points out in his introductory letter to the President of the Local Government Board, "two points to which the Royal Commission gave prominence in their report. The first of these—one which the Commissioners put in 'the forefront'—is the recommendation in Section 437 of their report 'that parents should not be required to submit their children to vaccination by means of any but calf lymph.' The second, which is referred to in Section 448," is "that the addition of glycerine, whilst it leaves the efficacy of the lymph undiminished, or even increases it, tends to destroy other organisms."

For the last six or seven years Dr. MONCKTON COPEMAN has paid special attention to the subject of glycerination of calf vaccine lymph; indeed, it may be gathered that he was one of the first, if not the first, to put this method into actual practice; but so far from the method being generally adopted in this country, we learn from the report that Sir R. THORNE THORNE and Dr. COPEMAN had to go abroad—to Paris, Brussels, Berlin, Dresden, Cologne, and Geneva—in order that they might see the method worked on any extensive scale, and in order that statistics of results might be obtained that would be convincing to the lay minds of those in authority. It may be argued that we are a very "safe" people, both individually and collectively, and certainly if slowness and safety are convertible terms the argument may be sustained, for we find that most of the Governments and other authorities concerned in the countries visited by Sir R. THORNE THORNE and Dr. COPEMAN have since 1891, when Dr. COPEMAN announced the results of his experiments, been engaged on sustained and elaborate investigations into the best methods of preparing and storing glycerinated calf lymph. The result is that whilst we are paying attention to anti-vaccinationists and are occupying ourselves with refuting their arguments, Germany has perfected a system of vaccination in which arm-to-arm inoculation plays no part, and has succeeded in obtaining sufficient lymph from a single calf to vaccinate 6000 or even 15,000 individuals, we being, or having been, content to reserve sufficient lymph from every calf at the Local Government Board's animal vaccine establishment to vaccinate only 200 or 300 children.

It may possibly be suggested that this enormous dilution, or economising of the actual quantity of lymph, must lead to less efficient vaccination; but, as a matter of fact, what do we find is the case? Sir R. THORNE THORNE and Dr. COPEMAN brought a quantity of the most "dilute" lymph with them from Berlin, and at intervals of nine, eleven, and thirty-seven days after its collection made seventy-six vaccinations by five insertions in every case, with a mean insertion success of 92 per cent. With other samples of lymph, diluted with glycerine to only about one-third of the amount of the above sample, insertion successes were obtained in 97, 98, 99, and 100 per cent. when the lymph had not been preserved for more than thirty-one days.

It is now generally recognised abroad that the addition of considerable quantities of glycerine does not in any way interfere with the activity of the vaccine lymph taken from calves. Dr. COPEMAN, who demonstrated this fact some time ago, further pointed out that, curiously enough, the added glycerine exerts a distinct bactericidal effect on organisms that may by accident find their way from the skin of the calf to the lymph. Thus he showed that lymph taken with ordinary precautions often contained micro-organisms of various kinds, whilst the same lymph to which a certain proportion of glycerine had been added soon became entirely free from viable micro-organisms, as demonstrated by plate cultivations. Even the pus-forming organisms, which are fairly resistant to the action of most bactericidal agents, are killed by the glycerine which is added for the purpose of diluting the lymph. It has frequently been objected that under certain, no doubt remote, contingencies, tuberculosis might be transmitted from child to child or from calf to child. Glycerination of the lymph appears to remove the last fraction of danger on this score, as it has been experimentally proved that the tubercle bacillus, when added to a mixture of lymph and an aqueous solution of glycerine, rapidly loses its vitality. It appears, indeed, that glycerination of calf vaccine lymph should cause the disappearance of most of the objections now raised by those who are afraid to have their children vaccinated as a protection against small-pox.

What are the advantages of this glycerination of calf lymph? In the first place the amount of active lymph to be obtained from a single calf can be increased from twenty to fifty times, so that the difficulty of obtaining a supply of good lymph may be said to have been reduced to a minimum. It is frequently stated that calf lymph has, when inoculated into certain children, set up erysipelas, sometimes of a very grave form. The addition of the glycerine ensures the removal of any germs which might possibly produce erysipelas, suppurative changes, or, as we have already seen, tuberculous infection, the three conditions which are said to be possibly resultant from the use of calf vaccine lymph. Hitherto most people have preferred the vaccine taken from the arms of healthy children for the vaccination of their children, but for some time past there has been a rapidly increasing minority who have had a distinct preference for carefully collected and preserved calf lymph, and now that this marked improvement in the method of preservation has been adopted there can be no doubt that Sir R. THORNE THORNE'S recommendation, that "vaccination, both primary and

secondary, carried out under the auspices of the Government, should be performed exclusively with vaccine lymph derived from the calf," will find favour in the eyes, not only of parents, but of medical practitioners also. One great advantage attending the addition of glycerine appears to be that the vaccine may be kept for a lengthened period in a moist form without losing its activity. In all probability the explanation of this rests, in part, at any rate, on the fact that putrefactive and fermentation germs are incapable of living and carrying on their special disintegration processes in the presence of glycerine, and the active vaccine agent is thus not destroyed. It is curious that the glycerine should exert so little effect on the vaccine if the active agent is of animal or vegetable origin, for, although under prolonged keeping the glycerinated lymph undoubtedly loses its activity, the falling off is so slow that no actual diminution of strength can be observed within a month or even longer, but at the end of three months a marked fall is observed, whilst in one instance the lymph had become inert in six months.

In their report Sir R. THORNE THORNE and Dr. COPEMAN go very fully into the whole question of the preparation of vaccine lymph as it is now carried out in the countries they visited, and what strikes the reader most forcibly is that vaccine establishments are no longer clean calf-houses; they are carefully thought out and well-equipped laboratories. In the report the calves are followed from the time they are purchased to the time they reach the butcher's table, where a careful examination is made for the presence of any tuberculous lesion in the carcase. Until this examination has been completed not a single tube of lymph is sent out for use. In some countries the animal is first tested with tuberculin; but in view of the above post-mortem examination the tuberculin test appears to be unnecessary, especially as its application involves a considerable amount of trouble and in some cases a certain loss of time. It should be stated, however, that the calves are usually kept isolated and under observation for about a fortnight before they are brought under treatment and are dieted most carefully, the diet varying of course in different countries. The various methods of cleansing the skin, of making the incisions or insertions, of collecting the lymph, of cleaning, emulsifying and glycerinating it are all given with a considerable amount of detail, and we are lead to expect that hairs and large epithelial particles similar to those that have been seen in samples of glycerinated lymph obtained in this country are in most cases removed by some contrivance or other. Details concerning the storage and distribution of lymph also occupy considerable space, but for these we refer those who take a special interest in the question to the report itself. It is interesting to note, however, that those who have had most experience of the preparation and action of glycerinated lymph are not by any means at one on some important, but perhaps minor, points. For example, some take the vaccine from the calf on the fifth day, others—and these appear to be in the majority—remove it on the sixth day from inoculation. Some, on the score of cleanliness, use cow calves only, others prefer bull calves, on the ground that the insertions on the skin of the scrotum give such good results. In Paris a certain number of patients are vaccinated directly from calf to arm, whilst in Germany and the other countries visited the lymph, before it is used, is always kept for some short time after the addition of the glycerine has been made. Centrifugalisation of the lymph has been tried in Berlin, but the nature of the results of this method of purification is as yet undecided. The lymph is undoubtedly of better appearance and contains fewer micro-organisms, even before the addition of the glycerine has taken place; but it is argued that if the active agent in vaccine virus is particulate and is locked up specially in the epithelial cells, continued centrifugalisation would remove it, and the lymph would lose its activity.

In the different laboratories very different proportions of glycerine are added. For example, in Paris the lymph is diluted with an equal bulk of glycerine; in Brussels twice the bulk of glycerine is added; whilst in Berlin fourteen parts of a solution of equal parts of glycerine and boiled water are added to one part of the epithelial pulp scraped from the vaccine vesicles. Some of the operators remove the vesicles by a single scraping movement, thus avoiding the collection of hairs and the admixture of blood with the epithelial mass and the fluid lymph, whilst others scrape the vesicles several times with the sharp spoon in order that they may remove as much as possible of the active material. These differences, however, are, after all, matters which can only be settled by direct experiment, and for their settlement well-equipped laboratories and expert workers are absolutely necessary. Such laboratories are now in full working order in most of the institutes visited, and much valuable work is being done in them, and we fully agree with Sir R. THORNE THORNE that laboratory accommodation with all the necessary appliances for the study of vaccine lymph should be added to the Local Government Board's animal vaccine establishment as soon as possible. A laboratory is now a necessary part of every hospital—there bacteriological and chemical investigations of various kinds are constantly being carried on for diagnostic purposes—and of every brewery and sugar refinery, where the purity and strength of beers, yeasts, and sugars have to be from time to time determined. How much more is such accommodation necessary for the examination of such material as vaccine lymph, which if not pure in every respect should never be used for purposes of inoculation? It has been due to the want of some means of testing and guaranteeing the purity of lymph that those who are opposed to vaccination have been enabled to make capital out of some of the objections that have from time to time been raised against it. The practical and statistical side of the vaccination question has been studied most carefully in this country, but much still remains to be done on the scientific side, especially from a bacteriological point of view, and we hope that the publication of the report now under consideration will cause those in authority to recognise the necessity of our being no longer dependent on the workers in other countries for the elucidation of problems already partially solved by our own workers. In the meantime we commend this report to the careful consideration of all who take an interest in the question of the preparation of good vaccine lymph.

THE Presidential Address delivered by Dr. SYMES to the Pharmaceutical Conference at Liverpool presents in a compendious form, not only a view of matters affecting the

interests of pharmacists at the present moment, but also of the progress which has been made in various directions since the foundation in 1863 of the institution under the auspices of which the address was delivered. The review is not less interesting than the view, and brings to light a very remarkable success, the result of corporate enterprise on the part of the pharmacists themselves, supported and supplemented by well-devised legislation. The great success of that period has undoubtedly been the perfecting of a system of dispensing drugs by the double process of reducing the manufacture to system and educating the dispensers to their work. For both these results the Pharmaceutical Society and the Pharmaceutical Conference are entitled to great credit each in its own way, although, of course, in a matter of this kind private enterprise, even although coöperative, could have accomplished little if it had not been reinforced by the strong arm of the law. The result is one upon which the great public have abundant reason to congratulate themselves, for it has enormously increased the success of the healing art, while the whole body of those who are engaged in the practice of that art—pharmacists, physicians, and others—to whom drugs are tools with which their daily work has to be accomplished, have special reason to rejoice in the circumstances which have brought those tools to their present perfection. It is difficult for the modern practitioner to imagine how disheartening must have been the working conditions of the good old days, when preparations were of no definite strength and purity was imperilled, not only by the unchecked abuse of adulteration, but also by legitimate differences of opinion as to formulas. That is now matter of history, and therapeutics has acquired the character of a science, because the materials with which it is conversant have assumed the exact nature of chemical compounds. Drugs, even though they remain physical mixtures of different materials, are not less susceptible of calculation and mathematical definition with reference to the purposes for which they are used than true chemical compounds themselves.

One-half of the gain resulting from this great advance in the art of compounding drugs would have been lost to the public if there had not proceeded *pari passu* with the improvement so introduced a corresponding improvement in the professional efficiency of the dispensers of them. A perfect tool is but an imperfect instrument in unskilled hands, and this work of education, even more perhaps than the work of standardising, is one upon which the Pharmaceutical Conference may congratulate itself. It is a work less easy to accomplish, and when accomplished more easily undone than the other. It pre-eminently needs the moral impulse which an annual conference can impart and the vigilant and authoritative criticism which a conclave of experts is alone competent to utter. The pharmacists have in this particular good reason to indulge in some professional pride. Not only has the standard of general and technical education within their ranks been raised with their coöperation during the past thirty years in a remarkable degree, but the material advantages of this change have accrued almost exclusively to the public. The pharmacist, far from rising in popular esteem in proportion to his increased merit, has simply dropped in that proportion out of the public eye. In any craft when technical education reaches a perfect result—that is to say, when the ordinary practitioner attains to finished skill in the use of his materials—the individual merges in the class. It is so in most of the mechanic arts; it is so in seamanship. TUBAL CAIN and PALINURUS would have no vogue in modern times. It is so with the pharmacist. The average standard is so high that within the limitations of the art it is difficult for anyone to be excellent in an eminent degree. There is in Dr. SYMES'S address some echo of a complaint that this is so; but it is precisely here that we hesitate to commit ourselves altogether to the view that he expounds. It is idle to repine at the want of recognition at the hands of the public, to which the most accomplished pharmacist must accustom himself, and not wise to construe it as a slight. It signifies only that the public reposes such complete confidence in the competency of the average pharmacist that it is not concerned to inquire who is more and who less accomplished. Such a frame of mind on the part of the universal patron shuts the door, no doubt, upon private ambitions; but no good citizen would desire to alarm the public out of its ungrateful security at the cost of exposing it to the dangers which alone could make it appreciate the trained pharmacist at his true value.

AT length the oracle has spoken. It is just half a century since, in 1847, the Poor-law Commissioners by a General Order provided in Article 99 that "any pauper of the fourth class whom the master may deem fit to perform any of the duties of a nurse or assistant to the matron may be so employed in the sick wards." Paupers of the fourth class were women "infirm through age or any other cause." Similarly, it was enacted that men "infirm through age or any other cause" might be employed in like manner as nurses in the males' sick wards. It was also enacted that the duties of a Poor-law nurse should be "to attend upon the sick placed under her charge and to carry out the orders of the medical officer in regard to their treatment." Until a few weeks ago these were the only orders or regulations issued by the Poor-law Commissioners or Local Government Board that had relation to the duties of a nurse. Many things have happened since then; nursing itself has developed into a profession, and the training that is necessary nowadays is of a very special kind. It is no longer left to SAIREY GAMP, but is a calling that exacts the devotion of a lifetime of educated and high-minded women. Nevertheless, the Local Government Board neither saw nor heard these things, and nothing was ever done to keep up with the times. It was left to a private philanthropic organisation, started by the efforts of Miss TWINING and a few other ladies seventeen years ago, to do a great deal that has been done in the way of improving workhouse nursing. They have done, it is true, very excellent work in the face of great difficulty, but it has always been by private influence, and not always with the concurrence of the guardians, who naturally look upon any outside agency with suspicion, that they have accomplished so much.

However, the Local Government Board has spoken at length, and though the Order dated Aug. 6th, 1897, which

is to be known as the Nursing in Workhouses Order, 1897, does not do all that it might, nevertheless, we have much to be thankful for, seeing that something has at length been done. Grave scandals have from time to time made their way into the public press, when patients have been scalded to death or otherwise neglected through the inadvertence and incompetence of the so-called "pauper help"—i.e., women infirm through age or any other cause. But we are glad to find that Article 99 of the Poor-law Commissioners' Order above referred to is by the new Order to be repealed, for Article 1 states distinctly: "Notwithstanding anything to the contrary contained in any of the Orders above referred to, no pauper inmate of the workhouse shall be employed to perform the duties of a nurse in the sick or lying-in wards of the workhouse or be otherwise employed in nursing any pauper in the workhouse who requires nursing." It also makes the very desirable regulation that even such pauper inmates as may be employed to do work in the sick or lying-in wards shall be subject to the approval of the medical officer of the workhouse. Article 2 enacts that persons employed as nurses or assistant nurses must have had proper training, such as "will render them fit to act in that capacity." In other words, it makes the employment of the trained nurse a necessity. A question, we fear, will arise out of this, for, if we are correctly informed, there exists considerable difficulty among some country guardians, who do not lay themselves out to make their officials particularly comfortable, in procuring the services of trained nurses. Much has hitherto been done to remedy this defect by the Working Infirmary Nurses' Association, which has, at the cost of considerably over £3000 collected by voluntary subscription, found suitable young women, and, if not sufficiently trained, has provided training for them for such situations. We learn from a report of the association that no fewer than 764 nurses have been thus supplied in the eighteen years during which it has been in existence. But we hear rumours that this admirable association has become so disheartened in its work as to actually entertain the idea of bringing its existence to a close. We sincerely trust it may not be so. But undoubtedly the question of providing trained nurses will have to be faced sooner or later. The demand for skilled nurses has so much increased of late years, the openings for them have become so much more numerous both in hospital and private work, that the supply, although it has increased, is not sufficient. The attractions of a country union are not very great, and the proverbial cheese-paring policy of the guardians prevents them from offering sufficient salary. It is not therefore surprising to hear that some country unions advertise repeatedly without obtaining any reply. What, then, is to be done to increase the supply? Some of the London infirmaries train their own nurses, and it seems to us that the sooner the authorities take the matter into their serious consideration the better. That the question should be faced either by the guardians in coöperation or by the Local Government Board as a State department would seem to be only reasonable.

Article 3 provides that where there is a staff of three or more nurses and assistant-nurses in a workhouse the guardians shall either appoint a superintendent nurse or, with the consent of the Local Government Board, direct that one of the nurses shall act as such. This, again, is a most desirable reform. One of the chief difficulties in the existing state of matters, and one which no doubt diminishes the supply of candidates in many instances, is that an untrained and sometimes an uneducated matron is placed in authority over skilled nurses. We do not think this ought to have so much weight as it is sometimes allowed to have, because the nurse should have no difficulty in getting on with her superior when she receives her orders practically from the medical man alone, and she ought to be able to act in harmony with those with whom she dwells. Often by displaying a little courtesy and deference friction may be avoided, and no institution can be governed by divided authority. The new Order, however, will help undoubtedly to diminish this friction. Finally, the new Order empowers the master, on the recommendation of the medical officer, to engage a temporary nurse in times of emergency. The Order, unfortunately, does not deal with the important question of the remuneration of nurses in workhouses, which, in our opinion, is hardly adequate considering the skill required and the various drawbacks to the situation, especially in provincial workhouses and infirmaries. Nevertheless, we heartily congratulate both the Local Government Board and the Poor-law service generally in obtaining at length a very important reform in workhouse nursing. In view of the fact that the metropolitan infirmaries alone contain some 13,000 sick persons, it is a question which affects the well being of a very large section of the community, and it is naturally a question in which we take great interest, seeing that the Founder of THE LANCET initiated the great reform of 1847.

Annotations.

"Ne quid nimis."

"AN OVERCROWDED PROFESSION."

SUCH is the heading of a correspondence now appearing in the columns of the *Standard*, in which a poor account is given of the medical profession as a means of living on the twofold ground that it is overcrowded and that the immense growth of medical charity in recent years draws away the patients of medical men in ever-increasing numbers. "A Medical Man," who opens the correspondence, avers "that he is not far from the truth in stating that the average income of a medical man in the present day does not reach £250, and that this sum must be still further reduced should candidates continue to flock into the profession at the rate they have done in recent years." There are no very accessible data for the verification of this estimate. It is not seriously refuted by reference to the difficulty of filling up army vacancies. It is, perhaps, a little under the mark; but even so the compensation is a poor one for work so responsible and laborious, and representing an education so prolonged and costly. This correspondent is followed by another signing himself M.A., M.B., M.R.C.S., who enlarges on the way in which the hospitals are being invaded by classes of persons for whom they were never intended, in the belief that they will see a Fellow of the College of Physicians or Surgeons, but who oftener see the young resident physician or surgeon. In this way the private practitioner is robbed of his patients, the hospital physician is not

benefited, the patient is demoralised, and the charitable public are cheated. This correspondent endeavours to show how dearly the patients who go to hospitals pay in wasting time, incurring weariness, and having their cases often very cursorily treated. He quotes an instance of a mother taking two children to the waiting-room, all three suffering from diphtheria. It was alleged that on a recent hot day no fewer than sixteen patients fainted in one morning, yet the hospitals go on enlarging and ventilating their waiting-rooms and introducing amenities which invite the very classes that have no right to use them. The only plausible answer to such representations is of the sort given in the letter of "Mater," who had failed to get her child cured by private practitioners and was told that at the hospital they would soon make him well. In this way she justifies herself—presumably of the lower middle class—going to a hospital and getting a consultant's advice for the petty pence paid by out-patients at some hospitals. But the excuse is a poor one. No medical man wishes to exclude those who cannot pay a consultant and whose diseases are prolonged or difficult of treatment from the benefits of the hospitals. The contrary is the case—as the letter of "Audi Alteram Partem" shows. But "Mater" does specifically say that she could not afford a reasonable fee to a consultant. One great part of the remedy for hospital abuse lies in a better understanding on this subject between consultants and general practitioners. The writer who initiates the correspondence does so because the winter session of the various medical schools is rapidly approaching and by way of warning to intending students and their parents It does not admit of a doubt that the profession is overcrowded and that there is a growing disposition on the part of an ever-increasing section of the public to get medical attendance for nothing or on terms which in no way remunerate a professional man who has spent five or six years in medical education, to say nothing of the preliminary years spent in preparing himself for the medical schools. These facts have been demonstrated over and over again in the pages of THE LANCET and in the statistics of the General Medical Council and of the Metropolitan Hospital Sunday Fund. It is fit that they should be present to the mind of every young man who contemplates entering the medical profession. There is some reason to think that they are being pondered by those whom they concern, and it is to be hoped that they will be increasingly considered. It is too soon to despair of altering the social and economic facts on which half of the argument is based. The hospitals must be restored to the poor and restricted to such as cannot be treated properly at home, or they will suffer in public estimation and support. The physicians and surgeons whose skill makes them attractive surely will not persist in being parties to such a use of them as demoralises the public and injures the prospects of the men whom they educate. At the same time there is enough in these gloomy estimates of the rofession as a calling to give pause to all who are not prepared to work hard in it, and so cope effectually with the competition of hospitals and low methods of practice. The proper form of medical attendance for all persons is the best private practitioner their means can command. There is a virtue in the continuity of the medical attendant. Such a relation has immense advantages which do not attach to stray interviews with a stranger at a hospital, and private practice is now conducted on terms almost too considerate to the poor and those of modest means. To men who realise the dignity of medical service and of the medical calling there is still room in our profession; but those who do not and who look for their reward in large incomes will do well to consider in the weeks which intervene between now and Oct. 1st the problems raised by the letters in our contemporary. We have written for the most part from the point of view of the medical student and practitioner. But the question of hospital abuse is a public one with wide bearings, involving fundamental ideas of charity and social morals.

"A PLEA FOR PUBLIC HEALTH."

IN connexion with the newspaper and other discussions regarding the Public Health (Scotland) Bill the *Scotsman* recently published a contributed article under the above title. Our attention was called to it only through a particularly feeble reply which appeared in another newspaper. Fortunately, the controversy in Scotland regarding the status of the medical officer of health is now in large measure settled by the amendments which were carried in the Report stage of the Bill in the House of Commons, but the article to which we refer is so good that we cannot refrain from quoting the latter part of it.

"In the nature of things ..... it is impossible to erect within the domain of public health two separate and independent departments. In local government there are many official spheres which are absolutely independent. The subject matter of their business is perfectly different. Their paths only cross occasionally, as those of every member of a civilised community must. Can there be a medical officer's and a sanitary inspector's departments in the sense that there is a town clerk's and a chief constable's? Can they act with no more 'relations' than the burgh engineer and the inspector of cleansing? It is obviously impossible. The sanitary department is as much an administrative unit as the department of town clerk or burgh surveyor. Writing of municipal government Dr. Bryce says[1]: 'Americans are sufficiently adept in the administration of large business enterprises to understand that in any such undertaking some one man must be given the power of direction and the choice of his chief assistants; they understand that power and responsibility must go together from the top to the bottom of every successful business organisation.' Unfortunately in Scotland it has hitherto been supposed either that the administration of public health falls naturally into two independent businesses, or that, being one large business enterprise, it could yet be successfully prosecuted under two responsible heads. We have shown that the former supposition is incorrect. Our legislators seem to imagine that alone of all businesses that of public health administration can prosper under conditions which in the abstract are inconsistent with prosperity. 'Can two walk together except they be agreed?' In the course of the discussion of this Bill it has become apparent, if it never has been so before, that medical officers and sanitary inspectors are not agreed. Let the inference be drawn that they do not walk together. It is no fault of theirs. Indeed, it shows a great deal of forbearance and self-restraint somewhere that no glaring public scandal has so far arisen. But there is daily friction and daily injury to current business, and daily loss to progress in sanitary knowledge. The sanitary inspector may go on removing 'nuisances' for ever, registering them in folios, and summing up their number in billions, but if he is independent of the medical officer their influence on disease will never be discovered. The medical officer may study the returns of deaths provided for him by this Bill until he is grey, and laboriously tabulate their nosology, but he might almost as usefully classify the flora of his district unless he can at the same time direct the investigation of the 'nuisances' related thereto. You place those officials in a false position and you are astonished if they disagree, and you believe that, disagreeing, their common work is still well done. In the present Bill you place them in a more false and impossible position than ever. So far as a statute can do such a thing, you give equal value to the opinion of these officials on questions of injury to health. How this will work out in courts of law it is easy to foresee. Ninety-nine per cent. of the 'nuisances' are removed for the asking, and in the larger burghs are never even seen by the statutory official. Anybody can see them and might sign the document which advises their 'author' of their existence. The signature of the subordinate who inspects and sees would be quite as efficient as that of the statutory sanitary inspector which may be affixed by a mechanical stamp. The case is exactly the same

[1] American Commonwealth, first edition, vol. ii., p. 303.

as that of the medical officer in the removal of cases of infectious disease and carrying out of disinfection. At one time warrants were frequently required. Now seldom or never. It would be quite as reasonable, and, in fact, be the true logical sequence of authorising the sanitary inspector to certify injury to health in the one per cent. of cases of nuisance which require resort to legal process for removal, to authorise him to inspect and certify for compulsory removal or disinfection the moiety of cases of infectious disease in which removal to hospital or disinfection are resisted. It is vain to assert any necessity of administration in some counties to justify such departures from principle. No local authority has ever said such a necessity exists. There is no evidence whatever of its existence. On the contrary, there can be no local peculiarity to which competent organisation is unable to adapt a sound principle."

The article was reprinted in full from the *Scotsman* and issued to Members of Parliament. A few copies remain, and can probably be obtained by our readers from the secretary of the Society of Medical Officers of Health for Scotland, Dr. Maxwell Ross, Avenel, Maxwelltown, Dumfries.

FIRST-AID FOR SAILORS.

OF the value of ambulance lectures there can be no two opinions. They enable men who are otherwise untrained to afford assistance to the injured during the interval between the occurrence of the accident and the appearance of a medical man on the scene. In hæmorrhage a minute may be of the utmost importance, and in fractures first-aid is of great utility, as the popular method of diagnosing a fractured leg is by seeing if the patient can walk. Though all must acknowledge the great value of first-aid, yet it is very necessary that those who have undergone this instruction should not take upon themselves to treat conditions which are beyond their skill. A letter appeared in the *Morning Post* of Aug. 14th urging the importance of first-aid lectures being given to the officers and men of the merchant service. With this we fully agree, but we cannot help thinking that the instance which was put forward in that letter as an example of a case in which first-aid would have been of value was hardly one which would have been likely to benefit by such treatment. One of the officers of the ill-fated steamship *Aden* had his shoulder dislocated, and it was not reduced until a fortnight later. Most lectures on first-aid hardly do more than mention dislocations, and the volume, "First-Aid to the Injured," issued by the St. John Ambulance Association, distinctly and properly says: "No one but a medical man should attempt to reduce or replace a dislocation, as this operation requires a very great amount of technical knowledge."

THE DANGERS OF ARTIFICIAL RESPIRATION.

THE most obvious thing to do when a patient fails to take air into his lungs while he is under the influence of an anæsthetic is to adopt one or another form of artificial respiration. In most cases the treatment is a correct one, and leads to a successful recovery of the patient. It must not, however, be assumed that in every case in which the breathing stops artificial respiration is the first act to be performed or is it a proceeding free from danger. In more than one instance resort to this method has led to fracture of the ribs owing to some excited assistant pressing too vigorously upon degenerate bones. There must in every case be a cogent reason for trying to force air into the chest and a clear knowledge that at the same time no impediment exists in the upper air passages to its free entrance and exit. There have been numerous cases in which foreign bodies—balls of worsted, artificial teeth, and masses of undigested food—have become engaged in the air passages, and have only been discovered after futile efforts at artificial respiration had been abandoned, as they had failed in their object. Not infrequently when abdominal section has to be performed to relieve intestinal obstruction there is a fatal tendency for the stercoraceous vomit so liable to occur during the operation to get sucked back into the larynx. This is the great peril of the anæsthesia in such cases, and every instance of death under it is a warning. Through the courtesy of Mr. W. F. Cholmeley, the house surgeon of the Wolverhampton and South Staffordshire Hospital, Wolverhampton, we are able to give the particulars of a case which illustrates this point, although we have no doubt that the actual performance of artificial respiration was indicated in this particular case. It appears that a man, aged fifty-eight years, exhausted by disease, was to be operated upon to relieve obstruction, caused, as was found at the necropsy, by annular carcinomatous growth constricting the intestine at the ileo-cæcal valve. The general condition of the patient was very bad, and the operation had to be delayed by the patient's refusal to give his consent, so that at the time he was given the anæsthetic his state was a grave one. He took the ether well. What degree of anæsthesia was obtained we are not told. In ten minutes, the abdomen being opened and the surgeon being engaged in handling the intestines to discover where the constriction was, the patient commenced to vomit. He became livid and a gurgling was heard in his trachea. Artificial respiration was resorted to for a short time without improving the man's condition, and then tracheotomy was rapidly performed. A quantity of stercoraceous vomit issued from the tracheal tube, and although the artificial respiration was kept up the man died. There can be no doubt that in cases where it is certain that vomit has entered the lungs the first thing to do is, as was done in the present case, to perform tracheotomy and draw out with some pump all the fluid which can be got from the air-passages. Artificial respiration when done by pressing upon the ribs and moving the arms can only force the stercoraceous vomit into the finer bronchi and effectually cut off any chance of the patient's recovery. It has been suggested that preliminary washing out of the stomach lessens the risk of vomiting, but it is not at present certain how far this can be relied on as a safeguard, since, as the stomach is emptied, a renewed regurgitation from the intestines is liable to occur. It seems probable that the inevitable manipulation of the intestines induces the reversed peristalsis which culminates in vomiting. Were this danger considered imminent it might justify a preliminary opening of the trachea and plugging above the tracheotomy tube, so as to effectually shut it off from the pharyngeal space. Whether such a procedure would increase too much the peril of the case experience alone can decide.

MINERAL WATERS AND MUDS OF RUSSIA.

VISITORS to Russia for the International Medical Congress will have the opportunity of visiting some of the interesting Caucasus spas. Considering the immense size of Russia it is only natural that she should possess an extraordinary number and variety of mineral waters. Dr. Frank G. Clemow's English pamphlet on "The Medicinal Waters and Muds of Russia"[1] comes in good time, and is of great interest even if English medical men, or their French and German colleagues, are not likely at present to send many patients to Russian spas. Three hundred mineral water springs and muds have been already examined and described in Russia, but others are known to exist, and when railways have opened up the vast Russian empire, it is to be expected that some out of the many Russian spas will become as famous and as much visited as the well-known health resorts in Central Europe. Moreover, balneology and balneo-therapeutics are being much studied

[1] St. Petersburg, 1897.

in Russia; balneological societies have been formed in the Caucasus and at Odessa, there are professors of balneology in the principal Russian universities and in the St. Petersburg Army Medical Academy, and the Caucasus springs have been placed under the control of a separate State department. The assistance of French engineers, who had made a speciality of mineral water springs, was obtained in dealing with some of the Caucasus sources, and a school of similar engineers has already sprung up in Russia itself. The Caucasian mineral waters may be divided into four chief groups: (1) the thermal sulphurous waters of the neighbourhood of Piatigorsk, with the Maria Theresa spring not far distant, a bitter aperient water; (2) the thermal iron-containing waters of Jeleznovodsk; (3) the muriated alkaline waters of the Essentuki group, of which the best-known (No. 17) spring, according to the most recent analysis, contains 4·3 parts carbonate of sodium and 3·6 parts common salt per 1000 (the dried salts from this spring are sold in different parts of Russia); the Essentuki sulphurous alkaline waters are used for baths; and (4) the cold, weakly mineralised Narzan spring and other springs near Kislovodsk, used both internally and externally. Besides all these waters there are excellent alkaline springs at Borjom, resembling some of the less thermal springs of Vichy. The salt lakes or brine pans on the northern shore of the Black sea, especially near Odessa and in the Crimea, furnish abundance of strong common salt waters; from the bottom and neighbourhood of these lakes ("limans") the mud for the already well-known mud baths of Odessa is obtained. Besides the salt mud baths, as used at Odessa and in the Crimea, a dilute kind of mud bath is used at Piatigorsk in the Caucasus, Hapsal in Esthonia on the Baltic coast, and at other places. A third kind of mud bath, or rather a peat bath, resembling the famous peat baths of Franzensbad in Bohemia, is employed at Lipetsk, in the south-central government of Tambof. Finally, as curiosities, come the very hot springs of Goriatchevodsk, Bragoun and Kalvadjar in the Caucasus, and of Bananin and Karkin, some of which are at boiling point, but they are equalled by the Great Geyser in Iceland, the waters of which have been ascertained to reach 212° F., and at ten metres below the surface even 219° F.

A FALSE MEDICAL CERTIFICATE.

IT is gratifying to find the Registrar-General showing due vigilance in the prosecution of offenders under the Registration Acts. On the 17th inst. at the North London Police Court, Mr. S. Kent Jones, medical assistant, unqualified, was summoned for making a false certificate of the cause of death of a child, Flora Stone Mack, contrary to the provisions of the Births and Deaths Registration Act, 1894, Section 40. The offence happened in this wise. Mr. Jones was acting as the assistant of Mr. Isaac Cohen, 151, Blackstock-road, N., who was absent for a holiday. The defendant's instructions, according to the report in the *Islington Gazette*, were curious. He was to sign "ordinary certificates for black eyes, injured fingers, and the like," but in the event of more serious cases he was to call in a medical man who was named. When the serious case arrived the medical man named had gone away and left no one in his place. The defendant was "horrified" at the situation in which he found himself, but "to save the trouble of an inquest and a post-mortem examination to the parents" he signed a certificate of death from pneumonia. The certificate was signed neither in the name of the defendant nor in that of his principal, but as "J. Cohen." As Mr. Cohen always signed "Isaac Cohen" the fraud was detected. The facts were elicited with great clearness by Mr. Charles Townley, Superintendent Registrar of Islington, who prosecuted, and they did not admit of dispute. The solicitor for the defendant admitted them at once and relied on the evidence of previous good character, which, however, as both Mr. Townley and the presiding magistrate, Mr. D'Eyncourt, argued, made his error worse in a sense, seeing that he should have known better. It is much to be regretted that there was no necropsy and no medical evidence; in such cases the fullest information should be obtained. In the end Mr. D'Eyncourt, recognising the gravity of such offences, inflicted the full penalty of £10 with Treasury costs of £1 16*s.* 6*d.*, or one month's imprisonment. The case is one of much public importance. It is amazing, in the light of all that has been done to discourage the employment of unqualified assistants, that Mr. Cohen should go away and leave the greater number of his patients in charge of such a person. It is not to be supposed that he authorised his assistant to use a false name or to sign death certificates, but he authorised him to sign other certificates and he placed him in the responsible position of a locum tenens. Mr. Townley said that doubtless such action would be dealt with by the General Medical Council. It is for the Registrar-General and the Council respectively to do their part and to protect the public from unqualified practice as far as their powers enable them to do so.

"EYELID SYMPTOMS IN GRAVES'S DISEASE."

IN a recent number of the *Edinburgh Medical Journal* Mr. Arthur Maude has published an interesting and suggestive paper on this subject. The two chief abnormal variations in movements of the eyelid are von Graefe's sign—the eyelid descending not synchronously with the descending globe, but more slowly and it may be more jerkily, and Stellwag's sign, consisting in retraction of lids and consequent increase in the width of the palpebral fissure. This retraction is most obvious in the upper lids and is frequently associated, as is seen when the patient's gaze is directed downwards, with a cupping of the lower lid. Both these signs are quite independent of exophthalmos, and their clinical value is difficult to estimate. They are neither constant nor pathognomonic, and are variable even in the same individual. Von Graefe ascribed the deranged movement to spasm of the fibres of Müller. More recently Ferri has advanced the theory that the retraction of the lid is the result of the mechanical shortening of the levator palpebræ due to the increased volume of blood-vessels distributed in its substance. Mr. Maude is of opinion that such an explanation might be true in a few outstanding cases, but could scarcely be so in all. Two theories are open as an explanation—viz., that the conditions are due to spasm of the raising muscles or to paresis of the orbicularis. That irritation of the sympathetic can produce retraction of the lids was shown by Remak's experiment and is further demonstrated by the action of cocaine as an irritant of the terminations of the sympathetic. Two difficulties present themselves with regard to accepting irritation of the sympathetic as an explanation, first, that this irritation does not affect the iris or ciliary muscle, both of which react very readily to external stimuli, and secondly, that the phenomena of retraction of the lid and impaired movement, although often variable, may be constant for long periods—a condition scarcely likely to be the result of irritation. On the other hand, it is stated that there is direct evidence that paresis of the orbicularis and other upper facial muscles is almost constant in Graves's disease. This group of muscles as regards its nervous supply is closely connected with the oculo-motor nucleus, and it would thus seem that the eyelid symptoms in this disease are intimately associated with changes in the third nerve nucleus. Mr. Maude's paper, it will be seen, gives an interesting and comprehensive statement of the

varying explanations offered in reference to the movements of the eyelids, and he himself evidently leans to the last-mentioned theory—viz., an affection of the oculo-motor nucleus and a consequent paresis of the upper facial group of muscles. But it might be objected to such an explanation that if, as is stated, this group of muscles is almost constantly weak, the movements of the lids should also be constant, and, as is well known, this is by no means the case, so that perhaps a satisfactory explanation for all cases is not yet forthcoming.

HOSPITALS FOR SOUTH LONDON.

ONE practical remedy for the want of hospital accommodation in South London is to get rid of hospital abuse and reserve St. Thomas's Hospital and Guy's Hospital severely for the really poor and for fit cases, instead of catering for the well-to-do. The proposals to transfer hospitals on the north side to the south side of the river sound slightly impracticable. The managers of all our hospitals are gratuitously undertaking the impossible task of catering for huge classes who can well take care of themselves and for whom the charitable public will not much longer feel it their duty to provide.

A NEW METHOD OF STUDYING THE PATHOLOGY OF THE VERMIFORM APPENDIX.

THOUGH the number of cases in which the appendix vermiformis has been removed is undoubtedly very large, but little work has been done in investigating the exact conditions present in the appendix. Dr. R Abbe, of New York, published a paper in the *Medical Record* of July 10th, in which he showed that, by distending the appendix with 95 per cent. alcohol and then immersing the organ in alcohol of the same strength, the pathology could be investigated much more satisfactorily than by the ordinary methods. The illustrations which accompany the paper show the chief types which are met with, and the differences, which are great, must be of importance in the pathology. The method is obviously of great value, and the results obtained should be of practical value in treatment.

ANOTHER DEATH FROM ANTHRAX.

AT an inquiry held at Bradford on Aug. 11th, regarding the death of a woman who had been engaged in wool-sorting, some interesting facts were brought to light concerning the way in which the new wool-sorting regulations are carried out, or rather set on one side. The medical officer of health of the district is of opinion that the case was one of anthrax, and, taking into consideration the circumstances under which the death occurred and the fact that a microscopical examination of the blood was made, there appears to be little doubt as regards the diagnosis. Although the infection was probably through the respiratory passages it seems that this woman was allowed to go to work whilst wearing bandages rendered necessary by the infliction of a wound on the arm. The dust from the dust chambers removed once a week should by the regulations laid down be burnt, but it is alleged that it was given away for the purpose of being transformed into an artificial fertiliser or manure. It seems incredible that people should think of using such a material for land. It was urged that disinfectants were sprinkled over the floors of the rooms in which the wool-sorters were working. It seems absurd with our present knowledge of the resisting power of anthrax spores to play with them in this fashion. Nothing but the most careful disinfection can be of the slightest value, and the mere sprinkling of disinfectants simply leads to a false sense of security and to the neglect of real precautions. What with the minimising of the draught, the contracting of the flues, the irregularities as regards opening bales in rooms not specially set apart for the purpose, and similar breaches of regulations, the astonishing thing is that fallen Persian wool, even when greasy, does not give rise to more cases of anthrax than are at present attributed to it. The manufacturers may complain that the restrictions put upon their trade interfere with the rapidity of work and therefore with their chance of competing in the open market; but as the various questions bearing on wool-sorter's disease are now no longer debatable it is surely time that an effort should be made to compel compliance with the new regulations, which, good as they are, in many respects might still with advantage be made more strict. Until, however, an effort is made to enforce even the present regulations we must expect from time to time a recurrence of these sad cases of death from anthrax.

UNQUALIFIED PRACTITIONERS AND DEATH CERTIFICATES.

WE publish in another column the account of an inquest held on Aug. 5th at Rosedale Abbey, Pickering, Yorkshire. As will be seen by the evidence the deceased, a woman aged fifty-six years, was under the treatment of an unqualified practitioner. The latter gave a certificate that death was due to "inflammation of the bladder and peritonitis." The registrar refused to accept the certificate on the grounds that it was not signed by a legally qualified medical man and that the death was sudden. On the case being reported to the coroner he decided to hold an inquest, and issued an order for a post-mortem examination. The necropsy revealed acute inflammation of the kidneys. The bladder was empty and contracted and free from disease. There was no peritonitis. What was in reality suppression of urine had been regarded as retention. It seems strange on the diagnosis that a catheter was not passed. What symptoms there could have been to suggest cystitis we are at a loss to understand. Even qualified medical men are liable to err, since medicine is not an exact science, but with the facts before them it is astonishing to a degree that the jury should for one moment have unfavourably criticised the registrar's action in refusing to register the death. It might have been thought that they would have expressed and recorded their approval of the course he took, instead of condemning both him and the coroner in the rider to their verdict that "the post-mortem examination and the inquest were unnecessary." We consider the case was eminently one for the fullest inquiry.

MATERNITY CHARITIES AND UNMARRIED WOMEN.

AN attempt to define the normal relation between childbirth and the work of charitable relief might at first sight appear to be superfluous. Yet the fact remains that such a definition is still unknown, or if it does exist is too imperfectly understood to command general approval. Where the antecedents to matrimony have been quite regular there is of course no difficulty save that of the expense incurred. The case of illegitimate childbirth on the other hand is quite different. Questions of moral responsibility have entered in here, and the consequence is that public institutions which freely accept as inmates poor and deserving married women have no offer of help for a maiden mother. While we are willing to spare by every due consideration the feelings of the former class with regard to social surroundings, we cannot but think that the distinction in treatment so favourable to them is unduly neglectful of their erring sisters. It cannot be defended on the ground of charity, unless we accept the much wider proposition that every mischance of illness which is the direct outcome of a vicious

practice is outside the province of the charitable healer. The close connexion between illegitimacy, concealment of birth, and infanticide needs no explanation. Such preventive measures as have hitherto been employed to destroy this mischievous and criminal combination have not been highly successful. The question remains whether they should not be supplemented by such public and charitable aid as is plainly needful to secure the safety of mother and child at the time of birth. We would answer this question in the affirmative. Mr. Frederick Lowndes, in a paper recently reprinted, advocates a similar view. He proposes that midwives attached to maternity hospitals should be eligible for attendance on cases of labour without distinction outside the walls of these hospitals, and that provision should be made for the reception of a certain number of necessitous cases within the wards also. We believe that the adoption of these or similar suggestions would neither, in a well-regulated institution, tend to lower our present standard of morality nor act upon the recipients of charity as an encouragement to do evil. A judicious selection of cases for admission would of course be imperative, and a preference, though not wholly exclusive, would naturally be given to married women. Defended by such needful safeguards, the arrangement suggested should, we consider, work well and should prove in the end to be both a humane and a politic measure.

THE OPERATIVE TREATMENT OF SPINAL CURVATURE.

AT the French Academy of Medicine M. Chipault has from the commencement of his researches on the reduction or correction of spinal deviations maintained that the correction will not be permanent unless the vertebral column is kept in its new position by direct fixation of the spinous processes; this applies both to scolioses and to the results of Pott's disease. All the authorities on the subject now agree with him. M. Regnault has, in the first place, demonstrated before the Anatomical Society that Pott's disease and spinal curvatures (scolioses) if left to themselves tend to recovery by ankylosis of the posterior portions of the vertebræ, and that metallic fixation of the processes consequently does no more than anticipate in a most logical way the natural process of recovery. In the next place, M. Ménard has exhibited to the Academy and to the Surgical Society a series of anatomical preparations which proves the harmlessness of the operation for reduction. So far as the spinal cord and the parts surrounding the vertebral column are concerned, the correction of these deviations sometimes produces a remarkable change in the configuration and dimensions of the space lying in front of the vertebral column, and these anatomical preparations show that for the purpose of rendering the improvement permanent it is necessary that the spine shall be fixed in the new position. Many cases of recent occurrence in which distortion returned when fixation was neglected after correction of the deformity prove the absolute necessity for fixation of the processes. The attention of surgeons in many different places seems at the present time to be directed to this subject, and M. Chipault has now given an account of the improvements which he has during the last few months made in the operation originally devised by him. It consisted, as will be remembered, in tying the processes with stout silver wire, a method which is satisfactory and will continue to be employed under certain circumstances, but is nevertheless sometimes difficult of application on account of the stiffness of the wire. In place of the wire he therefore now uses hooks of four different forms, two for lateral deviations and two for antero-posterior deviations; each form of hook is made in two qualities, one being rigid, for use when it has been possible to correct the distortion completely, and the other being pliable, so as to be available when the correction of the deviation is only partial. The hooks can be applied with the utmost ease. They cause no local disturbance and do not interfere with the development of the portion of the spine to which they are applied.

A PATIENT FINED FOR LEAVING A HOSPITAL.

A PATIENT has lately been fined for leaving a fever hospital while suffering from typhoid fever. He had been an inmate for some time and had apparently been very ill, but during his convalescence he thought he was well enough to go and so walked out one day without saying anything to anyone. Patients in general hospitals not infrequently practise this mode of departure, which probably does little harm to anyone except the patient himself; but in the case of infectious hospitals things are different, for unless the patient and his clothes are properly disinfected disease may be spread to any extent. It is thus right that patients should understand that although they may risk doing harm to themselves by leaving hospitals against advice, they must not be allowed to convey infectious diseases to other people who are unfortunate enough to come in contact with them.

THE FAMINE IN INDIA.

THE news from the famine districts of India has been so uniformly good for some weeks that we hope we are now within a measurable distance of the ending of the acute stage. But before the famine passes out of men's minds or is crowded out by the more exciting news of frontier wars, it may be well to recall the chief causes of the scarcity of food in the famine-stricken districts. No rain, no food for cattle, then starvation of the earth and its dwellers. Cattle are fed during the year for three months corresponding to the rainy season upon green grass, and then for the next four months they are fed upon hay made from this same grass; but at the end of seven months the supply is exhausted, and for five months the animals get only millet stalks as their staple food. It must be remembered that beans, barley, and oats grow only in Upper India. When the supply of rain is abnormally diminished the grass and hay are deficient, and the cattle die for want of food. The dearth of cattle puts an end to all bullock traffic, to the carting of grain for human needs, to ploughing, and to all agricultural work. Ploughing in India is done twice a year and is impossible except after the rains, because the ground at other times is too hard and fissured. In the old days the natives used to bury grain for years, and so in famine times there was a hidden store of food for men and cattle, but to-day the grain is all exported by rail to Bombay, and thence out of India. This is a necessary sequence of the modern extension of railways throughout country districts.

POLYNEURITIS.

AT the recent meeting at Baden Baden of the South-west German Society of Neurologists and Alienists[1] Professor Strumpell directed attention to some points in the symptomatology of this disease. He mentioned in particular the occurrence of double facial palsy in alcoholic neuritis as a result of an affection of both facial nerves. This condition he had observed on two occasions. He also referred to a hitherto undescribed affection of the auditory nerves which had been described by Professor Kiesselbach—viz., true nerve deafness on each side—passing off in three weeks, and being replaced by noises

[1] Neurologisches Centralblatt, p. 610.

in the ears lasting for a long time, the result, doubtless, of neuritis of the auditory nerve. He also referred to the frequent occurrence of psychical disturbances in this disease, and especially the difficulty experienced by the patients in retaining in the memory any fresh impressions. The patient referred to as suffering from nerve-deafness was unable to recall words repeated to her or objects shown to her after the lapse of a quarter of an hour. Anatomically the conditions found in alcoholic polyneuritis consisted in slight changes in the anterior horn cells, profound degeneration in the peripheral nerves, and very slight changes in the muscles in spite of complete reaction of degeneration. Professor Strumpell expresses the opinion that the anatomical conditions underlying this phenomenon of degenerative reaction still require investigation.

THE INTERNATIONAL JOURNAL "JANUS" AND EPIDEMIOLOGY.

THAT enterprising journal, *Janus*, which we commented upon in our issue of Jan. 9th, 1897, is anxious to bring about an international system of reporting epidemiological data, and thus to give warning of epidemic storms in somewhat the same way that atmospheric disturbances are now heralded so that precautionary measures may be taken. To quote the words of the editor:—

"In furtherance of these aims we purpose giving, as soon as arrangements can be made, a bi-monthly record of the progress of epidemiology, which shall include—(*a*) current statistics of the morbidity and mortality from epidemic diseases—contagious, miasmatic, and miasmatic-contagious—from states, provinces, and cities for which such data are available, accompanied when possible by the meteorology; (*b*) original observations on epidemic diseases; (*c*) historical records of epidemics in particular countries and cities, and their periods of prevalence and quiescence; (*d*) special communications on subjects of epidemiological interest. We shall feel deeply indebted to any of the collaborateurs or readers of *Janus* who will undertake to furnish accounts of epidemic diseases in their respective countries, or who will regularly supply copies of official bulletins of morbidity and mortality relating to the districts in which they reside which might otherwise be inaccessible to the Rédaction, or who may be disposed to assist us in any other way. Communications on this subject, in English, French, German, or Italian, to be addressed to Dr. A. Davidson, 30, Morningside-drive, Edinburgh."

We can only wish the editor of *Janus* every success in his project—one which we think is very valuable, but at the same time very difficult to carry out.

MEDICAL EXAMINATION OF CANDIDATES FOR THE ARMY.

SOME correspondence has recently taken place in the columns of the daily press relative to the system in force for the physical examination of candidates for Woolwich. It appears that a boy who went up straight from Cheltenham College passed in first at the last competitive examination for the Royal Military Academy, and was a few days afterwards rejected as medically unfit for the service. It is needless to say that this involved a great waste of time, work, and money, and that the result must have been a very keen disappointment to the boy, his family, and all concerned. It is impossible not to sympathise with them. The competition for commissions in the army is very severe and the standard for Woolwich is very high, and the wasted effort, when it is wasted, is consequently a really serious matter. A communication signed "H. C. D.," which subsequently appeared in the *Times*, contains some sensible comments, and puts the case fairly. It points out that the medical and physical requirements are very clearly set forth in the published official regulations on the subject, which can be obtained through any bookseller, and that if the parents or guardians of the intending candidate would only procure a copy of these regulations and take them and the boy to any careful and competent medical practitioner in order to see whether he fulfilled all the conditions laid down before commencing the requisite course of study and training, much, if not all, of this great disappointment would be saved. It is, nevertheless, pointed out that practically a preliminary examination might be made available for candidates at the hands of the Army Medical Staff by making use of the existing machinery at the headquarters of district commands and regimental districts where there are qualified medical officers with the necessary experience and the test appliances required for the examination of army recruits. Such a preliminary examination, which could, of course, only deal with existing conditions and states of health, would, at any rate in many cases, obviate the bitter disappointment of wasted effort.

PERFORATION OF A GASTRIC ULCER INTO THE PERICARDIUM.

THE probability of a gastric ulcer perforating the wall of the stomach depends chiefly on its situation. An ulcer on the anterior surface of the stomach will almost certainly lead to perforation if the ulcerative process continues; but should the ulcer be situated on the posterior wall adhesions form very readily, so that the stomach becomes adherent to the diaphragm or to the left lobe of the liver; but the diaphragm itself may become perforated by an extension of the ulceration, and then the ulcer may open into the left pleural cavity or into the pericardium. Perforation of the diaphragm by a gastric ulcer is decidedly a rare occurrence, and even when it does occur the pleura is much more frequently affected than the pericardium. Of twenty-eight cases of perforation of the diaphragm by gastric ulcers collected by Ludwig Pick[1] only ten were cases in which the ulceration had perforated the pericardium. In THE LANCET of Aug. 14th we recorded a very interesting case which occurred in the practice of Mr. Collingwood Fenwick, in which a gastric ulcer had perforated the pericardium with an immediately fatal result, and yet no previous symptoms had occurred to point to the presence of the gastric ulcer. In four of the ten cases collected by Pick the two surfaces of the pericardium had become adherent before the ulceration had perforated, so that the ulcerative process involved the substance of the heart itself.

WE regret to announce that Sir Joseph Désiré Tholozan died at Teheran (Persia) on July 30th in his seventy-seventh year. Sir Joseph Tholozan had held the appointment of physician to the Shah since 1858. He was a Commander of the Legion of Honour, a corresponding member of the Institut de France, and an Honorary K.C.M.G.; various orders and decorations were also conferred on him by the Persian, Russian, and Italian Governments.

PROFESSOR CORFIELD has been elected an honorary member of the Royal Society of Public Health of Belgium, of which he has been a corresponding member for some years. The honorary members consist of Ministers, Ambassadors, and other high State officials, and a few foreign hygienists. Professor Corfield is the only Englishman who has received this honour.

THE Queen has been pleased to appoint Mr. Henry Edgar William Hoffmeister, M.R.C.S. Eng., L.R.C.P. Lond., Surgeon

[1] Zeitschrift für Klinische Medicin, vol. xxvi., p. 473.

Apothecary to Her Majesty at Osborne, jointly with Mr. William Hoffmeister, M.D. Heidelb., and Mr. John Bates Hoffmeister, M.R.C.S. Eng., L.R.C.P. Edin.

THE vestry of St. James's, Westminster, have contributed £100 to the Middlesex Hospital and £150 to the Prince of Wales's Hospital Fund out of the surplus profit derived from the grand stand erected in Waterloo-place to view the Jubilee procession.

MR. W. ERNEST THOMSON, M.A., M.D. Edin., has been appointed to the chair of Physiology at Anderson's College, Glasgow, in room of Dr. Campbell Black.

THE BRITISH ASSOCIATION AT TORONTO.

IT would seem as though the members of the British Association this year had conspired together to make the scientific proceedings at their annual meeting at Toronto of more interest than usual. If so, the conspiracy has succeeded, for a more interesting and a more comprehensive list of subjects for the opening addresses could hardly have been selected. And many of them possess a special interest for medical men, since though, of course, each subject was dealt with in its proper section, yet many of them were related very closely to the science which concerns our readers most. The presidential address was delivered by Sir John Evans, K.C.B., who, though leaning naturally enough to the consideration of archæology as a science, did not forget to generalise so as to include in his discourse pertinent references to the progress of geology, palæontology, chemistry, and the allied sciences, chiefly in their bearing upon the history of man and of the world. How far Sir John Evans succeeded in his task of delivering an address on science in general our readers will be able to judge for themselves, as we print the address in full this week.

At first sight it is not apparent why Professor Michael Foster took for the theme of his address to the Physiological Section the physiology of the last thirteen years. But, as he pointed out, the past thirteen years do in a certain sense mark a break between the physiology of the past and that of the future. The last thirteen years have seen the removal of eminent men like Darwin, Claude Bernard, Bowman, Brown-Sequard, Brucke, Du Bois Reymond, Donders, Helmholtz, Ludwig, and Huxley, one prominent inquirer being left in the person of Albert von Kolliker, who "in his old age is doing work of which even he in his youth might have been proud." Despite the great losses in the ranks of physiological students during the last thirteen years physiology has not been idle, and Professor Foster deduced convincing examples in support of this statement. We are nearer a better understanding, he said, as to the exact nature of the fundamental changes which bring about contraction and as to the relations of those changes to the structure of muscular fibre. Then, again, another problem—the beat of the heart—has been strenuously studied with satisfactory results. Again, enormous advances have been made in what Professor Foster said may perhaps be called the new physiological chemistry. He referred mainly to the admirable researches of Kühne on the composition and constitution of proteids, and again to the remarkable work of Emil Fischer on the synthesis of the sugars. He even expressed the hope that as the old problems were attacked by the new chemical method—the old physiological chemistry passing surely but slowly away—we may at any time receive the news "that the stubborn old fortress of the proteids has succumbed to the attack." Finally, Professor Foster dwelt upon the relation of physiology to medicine. Physiology is (Professor Foster says), and always must be, the basis of the science of healing. But, as he pointed out, physiology not only heals, but governs and educates, "and if, as the whole past history of this science leads us to expect in the coming years, a clearer and clearer insight into the nature and conditions of that molecular dance which is to us the material token of nervous action, and a fuller, exacter knowledge of the laws which govern the sweep of nervous impulses along fibre and cell, gives us wider and directer command over the moulding of the growing nervous mechanism and the maintenance and regulation of the grown one, then assuredly physiology will take its place as a judge of appeal in questions, not only of the body, but of the mind; it will raise its voice, not in the hospital and consulting-room only, but also in the senate and the school."

A more interesting historic survey of the progress of botany could hardly have been compiled than is contained in the address to the Botanical Section by its President, Professor H. Marshall Ward. In this address we find the story of bacteriology and its development. Needless to add, the President dwelt considerably upon those researches bearing upon fermentation. Professor Ward some time ago defined alcoholic fermentation as the oldest form of microscopic gardening practised by man, and it is perfectly true. And what an important bearing this has had upon the fermented beverages of the nation. The production of these beverages depends upon the destructive action of certain fungi upon a saccharine liquid, and it is the altered or fermented liquor which is consumed. The theory, however, of alcoholic fermentation seems destined to receive its severest blow by the announcement by E. Buchner of the isolation of an alcoholic enzyme which will convert sugar into alcohol and carbonic acid without apparently the agency of plant life at all. It is impossible to dwell upon the interesting ramifications of Professor Ward's paper, so wide a field does his interesting address cover. Suffice it to mention that in the paper are considered the functions of specific bacteria in the development of quality in butter, cheese, and even tobacco, and the address concluded with an admirable account of those fungi which are antagonistic to our well being. Professor Ward referred to the best means of extinguishing those fungi which are injurious to vines and to hops. As he pointed out, we must learn the habits of the fungus and its life-history before this can be done satisfactorily, or, in other words, see how it is possible to step in at the critical moment and interfere with these relationships in the direction desired by human interests.

If we mistake not the address to the Chemical Section by Professor Ramsay will possess distinct historic importance. He announced the discovery, if we may so put it, of an undiscovered gas. In his laborious work on the properties of argon and helion he was led to surmise the existence of a new gas. In spite of failure to separate this gas, which probably is associated with helion and argon, Professor Ramsay is able to predict the properties of the unknown element. Thus its atomic weight has been approximately fixed, and the new gas, he says, will resemble argon and helion in being indifferent to the action of reagents and in not forming compounds. Listeners to his most interesting address will agree that Professor Ramsay fulfilled his promise to combine a little history, a little actuality, and a little prophecy. The history, as he said, belongs to the old world, and he had endeavoured to share passing events with the new, and hoped that much of the prophecy would meet with its fulfilment "on this side of the ocean."

In his address to the Zoological Section Professor L. C. Miall, expressed his conviction that we study animals too much as dead things. His address dealt mainly with

reproduction and animal transformations. The latter subject is, indeed, a most wide one, and, as Professor Miall observed, "how great is the part of adaptation in nature!" But comparatively modern adaptations may be of vital importance to the species and particularly luminous to the student because at times they show us nature at work.

Sir William Turner took as the basis of his address to the Anthropological Section "Some Distinctive Characters of Human Structure," in which he dwelt upon the differences of action between the animal and man, the former being guided by its instincts alone, while the instinctive acts of the latter are under the influence of the reason and intelligence. As the scale of humanity is ascended the more perfect does this control appear, and it was for scientific inquiry to determine, as far as the anatomical conditions will permit, the proportion which the association centres bear to the other centres both in man and other mammals, the period of development of the association fibres in comparison with that of the motor and sensory fibres in different animals, and, if possible, to obtain a comparison in these respects between the brains of savages and those of men of a high order of intelligence.

In the address to the Mathematical and Physical Section Professor A. R. Forsyth took occasion to remark that if in the range of human endeavour after sound knowledge there is one subject that needs to be practical it surely is medicine; yet in the scientific field it has been found that branches such as biology and pathology must be studied for themselves, and be developed by themselves with the single aim of increasing knowledge; and it is then that they can be best applied to the conduct of living processes. So also in the pursuit of mathematics, the path of practical utility is too narrow and irregular, not always leading far, but of the effective assistance which mathematics lends to general natural philosophy there can be no doubt.

These are but a tithe of the papers of equal scientific interest which were read before the Association, but in giving a general and necessarily brief sketch we have confined ourselves to those which have a distinct bearing upon medicine, and are therefore of particular interest to our readers. From the point of view of a record in the annals of science there can be little doubt that the meeting of the British Association in 1897 at Toronto was an unqualified success, and the great objects for which these annual meetings are convened—viz., the gathering together the results of a year's scientific labour, to measure how nearer we are to the truth, to open up or suggest new paths of inquiry, and to encourage and stimulate all those engaged in research for the truth's sake—were more than fulfilled.

UNQUALIFIED PRACTITIONERS AND DEATH CERTIFICATES.

AN adjourned inquest was held on Aug. 5th at the Crown Hotel, Rosedale Abbey, Pickering, Yorkshire, by Mr. W. W. Stenart Corry, deputy coroner, concerning the death of Jane Thompson, aged fifty-six years, who died somewhat suddenly while under the treatment of an unqualified practitioner named Alexander, of Castleton, whose death certificate, to the effect that the deceased died from "inflammation of the bladder and peritonitis," Mr. Thomas Richardson, registrar for the district, refused to accept. The following is an account of the proceedings:—

The evidence of James Thompson, taken at the previous inquiry on July 31st, in which he identified the deceased as his wife, having been read over, Mary Ann Mortimer, daughter-in-law of the deceased, was called. She said that to the best of her knowledge and belief the deceased had not passed any water since the morning of the day previous to her death; during the time she was present nothing was done by way of operation to give relief.

Mr. Geo. Agnew Robertson, of Pickering, who made a post-mortem examination of the body of the deceased, next gave a clear and succinct account of the condition in which he found the various internal organs, all of which he described as healthy except the left lung, which showed signs of an old-standing pleurisy; the heart, which was enlarged, flabby, and empty; and the kidneys, both of which were enlarged, congested, and in a state of acute inflammation. He told the jury he believed that death was due to "failure of the heart, the result of inflammation of the kidneys." He further emphasized the fact that the bladder was empty, contracted, and perfectly healthy.

Thomas Richardson, registrar of births and deaths for the Lastingham sub-district, who while giving his evidence was severely heckled by the foreman of the jury as to his reason for refusing to accept Alexander's death certificate, stated that he did so because the death was sudden, the deceased having been out at work on the day previous to her death, and because the certificate was not signed by a registered medical practitioner.

The evidence of Sergeant Kemp, who was also called, was of an official character, and described his action in carrying out the instructions of the coroner, Dr. Porter, of Hemsley, on whose authority the present inquiry was being held.

The deputy coroner, who had previously sworn himself and given evidence as to the state of health of the deceased when he himself last saw her professionally, about a month before her death, in addressing the jury, pointed out the discrepancy that existed between the result of the post-mortem examination and Alexander's death certificate, the statement in which in no one respect corresponded with the actual facts of the case; he explained the difference between retention of urine and suppression of urine, and pointed out that any operation, even the use of an instrument like a catheter in the latter case, however it might complicate matters, could give no relief, the supposition that the deceased was suffering from retention of urine, the result of inflammation of the bladder, being completely negatived by the medical testimony; he further said that as there was no evidence that Alexander had performed any operation, not even having passed a catheter, and there was no charge of malpractice against him, he, the deputy coroner, did not think it necessary to summon Alexander to appear and give evidence, as he otherwise should have done. Having made these remarks he left it with the jury to say what was the cause of death.

The jury, most of whose sympathies seemed to be on the side of Alexander, the unqualified medical attendant, brought in a verdict of "death from natural causes," adding as a rider that "they were of opinion that the post-mortem examination, the inquest, and the expenses incurred thereby were unnecessary."

BRITISH DENTAL ASSOCIATION.

THE annual general meeting of the British Dental Association, which commenced its proceedings in Trinity College, Dublin, on Aug. 17th, concluded a most successful meeting on Aug. 19th.

Mr. F. Canton, of London, the retiring President, in his valedictory address referred to the progress of dentistry during the last sixty years, and briefly indicated the vast improvements that have been made in the treatment for the preservation of the teeth. Dr. Stack, of Dublin, the incoming President, in an address of great interest to dentists, alluded to the establishment of the new Dental Hospital in Dublin, which owes its origin so much to the stimulus afforded to philanthropic effort by a former meeting of the association in Dublin.

The Rev. Dr. Samuel Haughton, Pro-Provost of Trinity College, on behalf of the University, expressed to the members the gratification the authorities had experienced in welcoming within the College walls such a scientific and educational body as the British Dental Association, and he trusted that on some future occasion when Ireland might be visited a similar opportunity for a display of their goodwill and hospitality might be afforded.

Various reports were read, including those of Mr. W. B. Paterson (London), the honorary secretary; Mr. W. Hern (London), the treasurer; and other business was concluded by the passing of hearty votes of thanks to the local committees in charge of the various sections of the meeting.

Besides many papers and demonstrations of special interest to dental surgeons which were given during the progress of the meeting there were others of considerable value in a general scientific sense; especially was this so in the section devoted to dental microscopy, a subject in which English dentists have already won considerable renown, both at home and abroad.

The social festivities during the meeting included a brilliant reception by the President and Mrs. Stack at the Science and Art Museum on Aug. 18th, attended by over 1500 people, a dinner in hall at Trinity College, and several other entertainments, including two on the invitation of Sir John Banks, K.C.B., and Sir John Power.

The meeting was well attended by members from all parts of England, Scotland, and Ireland, and was generally voted a most successful one.

GUARDIANS AND LUNATICS.

IT is necessary to have some place to which a person suspected of being a lunatic can be taken during the fourteen days set aside by law in which the medical men and justices engaged in the case can come to a conclusion as to whether he is a fit person for removal to an asylum. In the opinion of our legislators the workhouse is deemed the most suitable place, and in most such institutions there is accommodation of a more or less suitable kind for such cases. In the case of wandering lunatics, and whenever a person is in doubt as to whether a friend or relative is bordering on insanity, application is made to the relieving officer of the parish. The relieving officer then lays information before a lunacy justice, and the next move is for the latter to summon to his assistance a qualified medical practitioner. It rests entirely with the justice whom he calls and what fee he orders to be paid to the medical man in such circumstances. It is an order on the guardians to pay a certain sum for the examination of the alleged lunatic. The justice, in most cases, calls in the medical officer attached to the workhouse, because, for obvious reasons, he is more likely to be acquainted with the case, for the alleged lunatic being in the workhouse is under his care day by day, and he can watch the individual more closely than one called in from the outside. Strange to say, nothing is commoner than for the guardians to resist these payments and to try to cut them down. Indeed, it is periodical with some guardians to raise objections to these fees, though on what grounds it is extremely hard to say. The medical officer is an officer of the board, it is true, but the special work which he is called upon by the justice to perform does not come within the scope of his duties as defined by the Local Government Board. It is, moreover, work requiring very special knowledge, both legal and medical. It requires great judgment and necessitates a great deal of time to be spent on any particular case and additional inconvenience in the way of keeping appointments with the justice at unsuitable times, making special written reports, filling in certificates, and, finally, even in the present state of the law, though matters are much improved, considerable risk of an action-at-law is incurred. It seems to us, therefore, that this work should be paid for by extra remuneration, and we fail to understand why the guardians should object to the payment. These gentlemen consist, it is true, as a rule of persons to whom the medical man's salary seems, perhaps, a very large sum; but they forget that the exercise of his profession has necessitated a large expenditure of time and money in the acquisition of special scientific technical knowledge, and in this case the mastering of Acts of Parliament.

We have lately received a copy of a circular letter which runs as follows:—

PARISH OF ST. MARY'S, ISLINGTON.

LUNACY FEES.

Guardians' Offices, St. John's-road, Upper Holloway, N., July 19th, 1897.

DEAR SIR,—I am directed by the guardians of this parish to state that they have had under consideration the subject of the payment of fees in and about the examination of alleged lunatics. In this parish, as in many others, it is the custom for nearly all alleged lunatics dealt with by the parish officers to be admitted into the workhouse under Section 20 of the Lunacy Act, 1890, and they are in due course examined by justices who attend at the workhouse for that purpose. The justice attending always calls to his assistance in his examination the resident medical officer of the workhouse, and in a general way this is, no doubt, the best course. It is part of the duty of such officer to see to the needs of the lunatic before and after examination whilst in the workhouse, and this is covered by the salary he receives; but for the short time the examination takes place a fee is payable. The guardians believe that in many places, especially where there is a large and increasing number of alleged lunatics, dissatisfaction exists in regard to this matter, and that boards of guardians would rather increase the salary of a medical officer to a suitable amount than pay, as now, a salary, with the addition of a capitation fee for every person admitted into the Lunacy Wards.

At the present time there is before the House of Lords a Bill, introduced by the Lord Chancellor, to amend the Lunacy Acts, 1890 and 1891. The guardians of this parish are now asking the Lord Chancellor to introduce a provision into the Bill by which the justice shall call the medical officer of the workhouse or infirmary, as the case may be, to his assistance in the examination, and that it shall be part of the duty of the medical officer as such to render the assistance, reserving, however, the right for the justice to call in another medical man if special circumstances require it.

The guardians are also asking the Local Government Board for their support. If the guardians of your union agree with the proposal it is requested that they will be good enough to cause letters to be sent to the Lord Chancellor and the Local Government Board in support of the same.

I am, dear Sir, yours truly,
EDWIN DAVEY, Clerk.

It is, in other words, one of those periodical attempts on the part of the guardians to deprive one of their most underpaid and overworked officers of legitimate remuneration, and we trust sincerely, for the credit of the various boards of guardians into whose hands this letter may fall, that they will resist this as an injustice to one of their most deserving officials. Guardians are apt to forget how much the chief spending departments of the parish rest in the hands of their medical man, and if they would only take a liberal view of these things and treat their medical officer well they would keep his heart in his work, and would induce him voluntarily to reduce the expenditure of the parish by many hundreds a year. As a matter of fact, the guardians have, as the law now stands, no option in this matter of payment, but we prefer to present the case for their consideration on other and more liberal grounds, and thus to urge them to act fairly towards their medical officers.

OPENING OF THE MEDICAL SCHOOLS.

WINTER SESSION, 1897-98.

METROPOLITAN.

St. Bartholomew's Hospital.—The session will begin on Oct. 1st, and the annual dinner of old students will take place in the Great Hall on the evening of that day.

Charing-cross Hospital.—The session will commence on Oct. 4th, when an introductory address will be delivered in the anatomical theatre of the Medical School at 4 P.M. by Dr. Wm. Carter, Professor of Materia Medica in University College, Liverpool.

St. George's Hospital.—The session will open on Oct. 1st with an introductory address at 4 P.M. by Dr. Patrick Manson. The Medical School dinner will be held in the evening at the Whitehall Rooms, Dr. T. T. Whipham presiding. Dr. Alex Hill, Master of Downing College, Cambridge, will distribute the prizes on Oct. 29th.

Guy's Hospital.—The session will commence on Oct. 4th. On that day the first meeting of the Physical Society will be held and will be preceded by a house dinner at the Students' Club.

King's College Hospital.—There will be a reception and distribution of prizes on Oct. 1st.

London Hospital.—The session will commence on Oct. 1st. The old students' dinner, which will take the place of an opening ceremony, will be held in the library of the Medical College on that evening, the chair to be taken by Dr. A. Ernest Sansom.

Middlesex Hospital.—The session will commence on Oct. 4th, at 3 P.M., when Sir Donald Smith, G.C.M.G., LL.D., Chancellor of M'Gill University, Montreal, will address the students and distribute the prizes. The dinner of the past and present students will take place at the Café Royal on the same evening, Mr. Storer Bennett, F.R.C.S., in the chair.

St. Mary's Hospital.—The session will be opened on Oct. 1st, at 4 P.M., with an introductory address by Dr. William J. Gow. The annual dinner of past and present students will be held the same evening in the King's Hall, Holborn Restaurant. Mr. A. J. Pepper, F.R.C.S., will occupy the chair.

St. Thomas's Hospital.—The session will commence on Oct. 2nd. On the same day, at 3 P.M., the prizes will be distributed in the Governors' Hall, and the annual dinner will take place at the Whitehall Rooms at 6 30 P.M., Sir William MacCormac, Bart., President of the Royal College of Surgeons of England, in the chair.

University College Hospital.—The session will be opened on Oct. 4th, at 4 P.M., when the prizes will be distributed, after which an introductory lecture will be delivered by Mr. Raymond Johnson, F.R.C.S. On the same day, at 6 30 P.M., the annual dinner of the old and present students will be held at the Hôtel Cecil, Victoria-embankment, Dr. H. Charlton Bastian, F.R.S., in the chair.

Westminster Hospital.—The session will begin on Oct. 1st. The distribution of prizes, followed by a conversazione, will take place at the Westminster Town-hall on Sept. 30th, at 8.30 P.M.

Royal Free Hospital (London School of Medicine for Women).—The session will begin on Oct. 1st, when the opening address will be given at the Royal Free Hospital, Gray's-inn-road, by Mr. Grosvenor Mackinlay, F.R.C.S. Edin., at 8 30 P.M.

PROVINCIAL.

Mason College, Birmingham.—The opening of the winter session of the Queen's Faculty of Medicine of this College will take place on Oct. 1st, on which occasion Sir James Crichton Browne, M.D., F.R.S., will deliver the address. In the evening the medical men in Birmingham and the neighbourhood have been invited to meet Sir James Crichton Browne, at a conversazione.

University College, Sheffield, Medical Department.—The Medical School will open on Oct. 1st. The introductory address will be delivered at 4.30 P.M. in the lecture-hall of the College by Dr Philip Henry Pye-Smith, F.R.S., senior physician and lecturer on Medicine, Guy's Hospital.

At *University College, Bristol, Yorkshire College, Leeds, University College, Liverpool,* and *Owens College, Manchester,* the session will commence on Oct. 1st.

SCOTLAND.

Anderson's College Medical School, Glasgow.—The session of this school will open on Oct. 14th. There will be no special function of any kind. Each professor will meet his own students and give them a short introductory address connected more particularly with his own subject.

Western Medical School, Glasgow.—The school will re-open on Oct. 19th.

IRELAND.

Queen's College, Cork.—The session will open on Oct. 19th.

Queen's College, Belfast.—The first term of the session will begin on Oct. 19th.

CHANGES IN THE MEDICAL SCHOOLS AND HOSPITALS.

METROPOLITAN.

St. Bartholomew's Hospital.—During the past year numerous changes have taken place in the medical and teaching staff of the hospital and school. Mr. W. J. Walsham has been appointed Joint Lecturer on Surgery in Mr. H. T. Butlin's place, and Mr. Lockwood has succeeded Mr. Walsham as Lecturer on Anatomy; Dr. F. W. Andrewes is Pathologist and Lecturer on Pathology, vice Dr. Kanthack; Dr. Chattaway takes the place of Dr. W. J. Russell as Lecturer on Chemistry; Dr. P. Horton-Smith has been appointed Assistant Demonstrator of Practical Medicine, and Mr. J. Berry and Mr. D'Arcy Power Demonstrators of Practical Surgery. Mr. D'Arcy Power has also been elected a Demonstrator of Operative Surgery. The Curatorship of the Museum is in the hands of Dr. Andrewes, and Mr. T. S. Pigg acts as Assistant Curator. Dr. F. E. Batten and Dr. J. A. Hayward have been appointed Casualty Physicians. Mr. Bruce Clarke has been appointed Lecturer to Probationary Nurses.

Charing-cross Hospital.—Mr. Wallis has been appointed Lecturer on Operative Surgery in place of Mr. Waterhouse, who was appointed Lecturer on Anatomy. Dr. Arkle has been appointed Vice-Dean in place of Mr. Waterhouse, and Mr. Hardcastle has been appointed Medical Registrar to the hospital to succeed Mr. Senior.

St. George's Hospital.—Dr. Whipham has retired by the twenty-year rule and has became Consulting Physician. Dr. Penrose has been elected as full Physician and Dr. Cyril Ogle as Assistant Physician. Dr. A. Latham has been elected Curator of the Museum, Dr. Davidson and Dr. Fenton have been appointed Medical Registrars, Mr. F. Jaffray Surgical Registrar, and Dr. H. Menzies and Dr. Blumfeld Anæsthetists. Mr. F. S. Collard becomes Demonstrator of Anatomy, Dr. Ewart replaces Dr. Whipham as Joint Lecturer on Medicine, and Mr. Bennett and Mr. Dent lecture on Surgery instead of Mr. Pick.

London Hospital.—Dr. Ramskill, Consulting Physician, who was appointed an Assistant Physician as long ago as 1859, died on June 22nd last. Mr. Walter Rivington, Consulting Surgeon, who was appointed Assistant Surgeon in 1863, died on May 8th last. Dr. Samuel Fenwick has been appointed a Consulting Physician, and Dr. Henry Head has been appointed an Assistant Physician. Mr. Frederick Treves has resigned the Chair of Surgery and has been succeeded by Mr. Mansell Moullin. Physiology and Histology will now be taught by Dr. Leonard Hill and Mr. Hutchinson. Dr. Dawson has been appointed Demonstrator of Materia Medica, Mr. Jenkinson Demonstrator of Biology, and Mr. Roxburgh Teacher of Practical Surgery and Demonstrator of Anatomy. Dr. Bullock has been appointed Bacteriologist to the Hospital and Lecturer on Bacteriology and Pathological Chemist to the College. Dr. Dawson and Dr. Head have been appointed Instructors in Elementary Clinical Medicine, and Medical and Surgical Tutors have been appointed.

Middlesex Hospital.—The hand of death has taken away Dr. Henry Thompson, Consulting Physician, and Mr. Leopold Hudson, Assistant Surgeon and Surgeon in the Ear and Throat Department. Mr. T. H. Kellock has been appointed Assistant Surgeon and Surgical Registrar, and Mr. Stephen Paget Surgeon in the Ear and Throat Department. Dr. C. R. Biss has been appointed Physician to Out-patients. Mr. G. Murray has been appointed Tutor in Surgery, and Mr. Stephen Paget Lecturer in Laryngology and Otology. The Demonstrators for the Session 1897-98 are as follows: Anatomy, Dr. R. Gladstone and Mr. A. S. Fergusson; Physiology, Mr. J. S. Goodall and Mr. N. Navaica; Biology, Mr. J. S. Goodall; and Chemistry, Mr. G. E. Froggatt.

St. Mary's Hospital.—Mr. Owen is now Lecturer on Clinical Surgery, and Mr. Pepper Joint Lecturer on Surgery; Mr. Silcock and Mr. Collier are Joint Lecturers on Operative and Practical Surgery; Dr. Caley is Physician to Out-patients, Lecturer on Materia Medica, and Senior Medical Tutor; Mr. Plimmer, Joint Lecturer on Pathology; Mr. H. S. Collier, Surgeon to Out-patients and Warden of the College; Dr. J. F. H. Broadbent, Casualty Physician; Dr. F. J. Poynton, Medical Registrar; Mr. V. W. Low, Surgical Registrar; Dr. W. J. Harris, Junior Medical Tutor and Editor of the *Gazette*; Dr. A. F. Bill, Curator of the Museum and Demonstrator of Pathology; and Dr. E. J. Steegman, Demonstrator of Hygiene.

Westminster Hospital.—The changes on the hospital staff are the appointment of Mr. Macnamara as Consulting Surgeon, Mr. W. G. Spencer as Surgeon, and Mr. W. Turner as Assistant Surgeon. Dr. Dupré has relinquished the post of Lecturer on Chemistry after having held the chair for thirty-three years and has been succeeded by Dr. Wilson Hake. Dr. Hebb has become Dean on the retirement of Mr. Spencer, and Mr. A. H. Tubby has been appointed Vice-Dean.

St. Thomas's Hospital.—Sir Felix Semon has resigned his charge of the Throat Department, and his successor will shortly be appointed. Dr. Barry Blacker has been appointed Superintendent of the x-ray Department, and Dr. L. L. Jenner Superintendent of the new Clinical Laboratory. Dr. C. R. Box has been appointed Resident Assistant Physician, and Mr. C. S. Wallace Resident Surgeon; while Dr. A. E. Russell, Mr. E. O. Thurston, and Dr. A. F. Stubb have been appointed Medical, Surgical, and Obstetric Registrars respectively.

PROVINCIAL.

Sheffield School of Medicine.—Dr. C. Addison has been appointed Arthur Jackson Professor of Anatomy in the New College, Dr. Hugh Rhodes Lecturer on Forensic Medicine in place of Dr. Harvey Littlejohn, Dr. Andrew Walker Demonstrator of Bacteriology, Mr. Baynes Smith Laboratory Assistant in the Physiological Department, Dr. John Robertson Lecturer on Public Health, and Mr. A. Cuff and Mr. L. T. Giles have been appointed Demonstrators of Anatomy.

Mason College, Birmingham.—Dr. Robert M. Simon, Physician to the General Hospital, has been appointed Professor of Forensic Medicine, in place of Professor J. St. S. Wilders, who has been compelled, owing to ill-health, to resign the chair which he has occupied for thirty years. The council have appointed him an Emeritus Professor. Dr. Swale Vincent, having been

appointed Research Scholar of the British Medical Association, has vacated the position of Demonstrator of Physiology, and has been succeeded by Dr. J. S. Bolton. The Lectureships in Ophthalmology and Operative Surgery have been constituted Professorships, and Professor Priestley Smith and Professor Jordan Lloyd have been elected to fill these chairs. Mr. C. Leedham-Green, surgeon to out-patients at the Queen's Hospital, has been appointed Assistant Lecturer in Bacteriology.

University College, Bristol.—Mr. C. A. Morton, F.R.C.S., and Dr. J. Swain, M.S. Lond., have been appointed Joint Professors of Surgery, in the place of the late Mr. Greig Smith.

SOME LITERATURE CONCERNING THE PLAGUE.

WE have already alluded very briefly to some recently published reports[1] regarding the plague, and we may now notice them somewhat more in detail, although it will be difficult, if not impossible, to do so at any length, seeing that the literature on the subject is somewhat voluminous. Taking them in chronological order we may start with the report regarding the prevalence of bubonic plague in the colony of Hong-Kong during the years 1895 and 1896 by the Acting Colonial Surgeon, J. M. Atkinson, M.B. Lond., D.P.H. Camb. This, it will be seen, deals only with the history of the disease in Hong-Kong during those years and refers to the able report by Dr. Lowson, Acting Superintendent, Government Civil Hospital, for the history of the epidemic in 1894. In view of the important practical questions that have engaged, or are engaging, the attention of many experts in Europe and India, the author has endeavoured to set forth such deductions as seemed to him reasonably warranted from the data at his command and to enumerate the more important facts to be noted in preventing or limiting the occurrence and spread of the disease.

The report contains a brief history of the plague in China and Hong-Kong during modern times, drawn from that by Dr. Rennie on the disease at Canton in 1894 contained in the Imperial Maritime Customs Medical Reports, and from Allbutt's System of Medicine, 1896, together with a sketch plan drawn to scale showing the several places referred to and illustrating the progress and route taken by the disease. Touching the prevalence of plague in Hong-Kong in 1895 it is shown that the total number of cases reported was forty-four; that the disease commenced at the end of April and continued more or less during the remainder of the year; that the greatest number of cases occurred during the months of June and December, but that the disease did not assume such proportions as to constitute an epidemic; and that, with the exception of Heung-lane, in no portion of the colony did it obtain any serious hold. The procedure adopted on the receipt of information that the disease had re-appeared consisted of house-to-house visitation, the removal and segregation of the sick, together with the isolation of the infected, the notification of infected localities, and the application, general and special, of sanitary regulations, disinfection, cleansing, the removal of overcrowding, and the strict and steady application of the powers conferred by public health ordinances to tenements, lodging-houses, &c. The condition of Hong-Kong as regards the overcrowding of houses on a given space, their vicious construction of cock-lofts, mezzanine floors and back-yard obstructions, involving overcrowding, absence of light, ventilation, cleanliness and decency, was something terrible and called for wholesale changes in every direction. Although much has probably been done of late years under the pressure and influence of the alarm caused by the epidemic of plague it is impossible to believe that there does not even now remain a good deal to be carried out in the same direction. Passing from the sanitary and prophylactic measures required in this and in all cases of epidemic disease, we come to the medical aspect of plague. The pathology, symptoms, and morbid anatomy having been described in Dr. Lowson's report of the plague in 1894 and in Dr. Wilm's later report, the author confines himself to the facts elicited by the further experience of 1896, and the following are some of the facts and deductions set forth in his report. The main channel by which the bacillus gains access to the body appears to be the digestive tract; infection by the skin (inoculation) is relatively rare, and the immunity of those who attended plague patients or were engaged in the inspection and disinfection of infected houses shows that the plague bacillus is not commonly received by the respiratory tract through the medium of the air. The plague bacillus was not detected, it may be mentioned, in the course of many examinations of hospital ward air made for that purpose. Rats, mice, monkeys, pigs, and fowls have been proved to have acquired plague after having been fed with fragments of organs of animals that have died from the disease. In addition to the fæces, the bacillus leaves the body by the urine, as demonstrated by the result of culture experiments. The period of incubation seems to be generally from three to five days, although one case is related by Dr. Wilm of fifteen days. About 70 per cent. of the deaths of those attacked by the disease took place during the first six days. In 95 per cent. of the cases albumin was found in the urine, varying in amount from one-tenth to one-half.

The general conclusions to be drawn from the experience of bubonic plague in Hong-Kong in 1895 and 1896 are stated in the report as follows:—*A.* That the occurrence of plague is favoured by: (1) Long prevalence of drought or of abnormally low rainfall; (2) atmospheric temperature below 82° F.; (3) absence of sunshine; and (4) general insanitary conditions such as obstruction to the free access of light and air to domestic dwellings. *B.* That the steps to be taken to retard the progress of the disease are: (1) General cleanliness and the free admission of light and air to domestic dwellings; (2) the immediate isolation of the sick and those who have been in close contact with the disease; and (3) the careful and systematic disinfection of all premises in which cases occur and of latrines.

(To be concluded.)

[1] THE LANCET, July 24th, 1897.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Enteric Fever at Hucknall Torkard, by Dr. Buchanan.[1]—Hucknall Torkard, a small town in Nottinghamshire of some 15,000 inhabitants, has more than once suffered from enteric fever, and last year no less than 141 cases were reported there. In considering the causes of this outbreak Dr. Buchanan arrived at the conclusion that there had been no common infection by reason of occupation, food, or milk; that in view of the two distinct systems of sewers these could not be held to be primarily responsible; and that there was no evidence that the public water-supply, which was general to the whole town, had caused the epidemic or was exposed to any source of pollution. But there had been a heavy incidence of the disease on certain streets and localities, and in a number of houses the occurrence of multiple attacks was remarkable. Detailed investigation of such localities brought out the fact that there were present frequent conditions of dirt, unpaved and badly-drained yards, pollution of soil from waste water and soakage of middens, undue overcrowding, and conditions affecting pail-closets which favour retention of infection. These are conditions which notoriously facilitate the spread of enteric fever, they are conditions which are known by those who have only the most superficial knowledge of public health to be those which sanitary administration should deal with; and yet in certain towns like this one they are allowed to persist to the danger of public health year after year. Nothing accounts for persistently recurring enteric fever more than does the disgraceful practice still so common in many parts of England of storing up excreta and refuse in close proximity to dwellings in receptacles open to rainfall

[1] Eyre and Spottiswoode, East Harding-street, E.C.; John Menzies and Co., Edinburgh and Glasgow; Hodges, Figgis, and Co., Dublin. Price 3d.

and sun and sunk into the ground. If people had wanted to design something which by fouling the air; by polluting food supplies in pantries, &c., opening on to back yards; and by storing up infection in a polluted soil would ensure recurring typhoid fever, midden-systems such as those which exist in Hucknall Torkard and other places would certainly have to be accredited with having achieved the end aimed at. It is to be hoped that after this renewed experience the District Council will amend these dangerous conditions by carrying out the recommendations attached to Dr. Buchanan's report.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Blackpool Urban District.—Dr. Jasper Anderson traced, he thinks, during the year 1896 an epidemic of enteric fever to the consumption of mussels which were procured from a spot where the sea water had an opportunity of becoming fouled by sewage. It seems that there were 21 cases notified in October, as against 8 in September and 8 in November; and in 10 out of the 21 cases notified in October a history of eating mussels was obtained. It seems, however, that in certain cases the period which elapsed between the consumption of the mussels and the development of the disease was rather long for enteric fever. A complication is introduced, too, by the seasonal increase of enteric fever occurring at a time when the mussels are regarded as in good condition at Blackpool. However, we have little doubt that enteric fever may be conveyed by sewage-polluted mussels, and we quite agree with Dr. Anderson as to the desirability of preventing their consumption.

Southampton Urban District.—The recent extension of this borough has done much towards bringing its population up to 100,000, and it was estimated for 1896 at 98 002. Mr. Wellesley Harris, owing to the necessary uncertainty of the estimate under conditions of extensive and of considerable immigration, urged the desirability of a census being taken, but the council was unwilling, it appears, to undertake the task. The general death-rate of the district was for 1896 16·47 per 1000, as against a rate of 18 27 in 1895, the rate for the town proper being 17·63. There were nine cases of small-pox notified during the year, several of them being imported by ships frequenting the port. One case was apparently caused by a bag of dirty linen sent home from the Cape. The history of 1896 re small-pox teaches, Mr. Harris observes, the wisdom of having provided the floating hospital in which the cases were well isolated. In former years the introduction of a case of small-pox into the old hospital appears to have been liable to cause the spread of the disease to the surrounding district. Scarlet fever became epidemic in Southampton during the year, and the hospital accommodation was quite inadequate to deal with it, only 31 per cent. of the cases being isolated. Mr. Harris thinks that had there been sufficient accommodation the epidemic would have been much curtailed, and he furnishes instances in support of his contention. Everything seems to have been done to control the epidemic, and the public were educated up to their responsibilities by means of leaflets, &c. Under these circumstances we are glad to learn that the sanitary authority have acquired a suitable hospital site, and have applied to the Local Government Board for sanction to borrow £30,000 for the erection of a hospital. School closure was resorted to on two occasions for preventing the spread of measles, and in each case this action, Mr. Harris states, was attended with excellent results. Complaints in reference to the discharge of sewage on the foreshore have been made from time to time, and it has, it seems, been decided by the Council to accept the proposal of Mr. Harris to collect and treat the sewage and to discharge the purified effluent at one point on the ebbing tide. Mr. Harris advocates that samples of the effluent should be taken regularly and submitted to the borough analyst for examination.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 7195 births and 6212 deaths were registered during the week ending Saturday, August 14th. The annual rate of mortality in these towns, which had increased in the six preceding weeks from 14 7 to 26·9 per 1000, further rose during the week to 29 5. In London the rate was 26·2 per 1000, while it averaged 31·7 in the thirty-two provincial towns. The lowest death-rates in these towns were 14·6 in Swansea, 15·8 in Halifax, 16·4 in Croydon and in Huddersfield, and 18·2 in Bristol; the highest rates were 39·6 in Salford, 40·9 in Liverpool, 42 6 in Preston, and 43·0 in Birmingham. The 6212 deaths in these towns included 2368 which were referred to the principal zymotic diseases, against 1337 and 1994 in the two preceding weeks; of these, 2038 resulted from diarrhœa, 134 from measles, 70 from whooping cough, 54 from diphtheria, 38 from scarlet fever, and 36 from "fever," principally enteric. The lowest death-rates from these diseases were recorded in Halifax, Bristol, Swansea, and Huddersfield; and the highest rates in Salford, Leeds, Sheffield, Preston, and Birmingham. The greatest mortality from measles occurred in Swansea, Birmingham, Birkenhead, Salford, Blackburn, and Preston; from scarlet fever in Huddersfield; from whooping-cough in Plymouth, Wolverhampton, and Blackburn; from "fever" in Derby; and from diarrhœa in Birmingham, Leicester, Nottingham, Liverpool, Leeds, and Sheffield. The 54 deaths from diphtheria included 38 in London, 3 in Birmingham, and 3 in Leicester. No fatal case of small-pox was registered during the week in any of the thirty-three large towns; and there were no small-pox patients under treatment in any of the Metropolitan Asylum Hospitals on the 14th inst. The number of cases of scarlet fever in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 3341, against numbers increasing from 2380 to 3239 on the fourteen preceding Saturdays; 347 new cases were admitted during the week, against 396, 390, and 376 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 146 and 156 in the two preceding weeks, declined during the week to 118, and were 63 below the corrected average. The causes of 68, or 1·1 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Manchester, Hull, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Sheffield and Sunderland.

In thirty-three of the largest English towns 6796 births and 6058 deaths were registered during the week ending Aug. 21st. The annual rate of mortality in these towns, which had increased in the seven preceding weeks from 14·7 to 29·5 per 1000, declined again last week to 28·7. In London the rate was 24·2 per 1000, while it averaged 31·8 in the thirty-two provincial towns. The lowest death-rates in these towns were 12·0 in Halifax, 12·8 in Huddersfield, 17·2 in Swansea, and 18·9 in Bristol; the highest rates were 42·9 in Birmingham, 45·2 in Hull, 45·3 in Preston, and 52·6 in Wolverhampton. The 6058 deaths in these towns included 2319 which were referred to the principal zymotic diseases, against 1994 and 2368 in the two preceding weeks; of these, 1997 resulted from diarrhœa, 138 from measles, 74 from whooping-cough, 42 from diphtheria, 34 from scarlet fever, 34 from "fever" (principally enteric), and not one from small-pox. The lowest death-rates from these diseases were recorded in Huddersfield, Halifax, Swansea, and Oldham; and the highest rates in Manchester, Birmingham, Wolverhampton, Hull, and Preston. The greatest mortality from measles occurred in Salford, Blackburn, Birmingham, Manchester, and Preston; from scarlet fever in Wolverhampton; from whooping-cough in Gateshead; and from diarrhœa in Leeds, Manchester, Burnley, Salford, Leicester, Birmingham, Wolverhampton, and Hull. The mortality from "fever" showed no marked excess in any of the large towns. The 42 deaths from diphtheria included 29 in London and 3 in Liverpool. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals during the week ending Saturday last, the 21st inst. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 3400, against 3106, 3239, and 3341 on the three preceding Saturdays; 340 new cases were admitted during the week, against 360, 376, and 347 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 156 and 118 in the two preceding weeks, were 119 last week, and were 53 below the corrected average. The causes of 61, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a

coroner. All the causes of death were duly certified in Cardiff, Salford, Oldham, Sunderland, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Liverpool, Burnley, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·2 and 20·5 per 1000 in the two preceding weeks, declined again to 19·0 during the week ending August 14th, and was 10·5 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 10·2 in Aberdeen and 14·4 in Edinburgh to 23·7 in Greenock and 25·6 in Perth. The 565 deaths in these towns included 113 which were referred to diarrhœa, 18 to whooping-cough, 12 to scarlet fever, 7 to measles, 4 to "fever," and 2 to diphtheria; in all, 156 deaths resulted from these principal zymotic diseases, against 89 and 137 in the two preceding weeks. These 156 deaths were equal to an annual rate of 5·2 per 1000, which was 6·0 below the mean rate for the week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 35, 51, and 87 in the three preceding weeks, further rose to 113 during the week, of which 79 occurred in Glasgow, 12 in Greenock, and 6 in Dundee. The 18 deaths referred to whooping-cough showed a decline of 4 from the number recorded in the preceding week, and included 9 in Glasgow and 6 in Edinburgh. The fatal cases of scarlet fever, which had been 5 and 8 in the two preceding weeks, further rose to 12 during the week; 9 occurred in Edinburgh and 2 in Dundee. The 7 deaths from measles showed a marked decline from the number in the preceding week and included 4 in Leith. Of the 4 deaths referred to different forms of "fever" 2 were recorded in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 66 and 71 in the two preceding weeks, declined to 58 during the week, and were 13 below the number in the corresponding week of last year. The causes of 38, or nearly 7 per cent., of the deaths in these eight towns during the week were not certified.

The annual rate of mortality in the eight Scotch towns, which had been 20·5 and 19·0 per 1000 in the two preceding weeks, rose again to 21·6 during the week ending Aug. 21st, but was 7·1 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Perth and 16·9 in Aberdeen to 24·2 in Dundee and 31·3 in Greenock. The 643 deaths in these towns included 147 from diarrhœa, 21 from whooping-cough, 6 from measles, 5 from scarlet fever, 4 from diphtheria, and 4 from "fever." In all, 187 deaths resulted from these principal zymotic diseases, against 137 and 156 in the two preceding weeks. These 187 deaths were equal to an annual rate of 6·3 per 1000, which was 4·7 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 51, 87, and 113 in the three preceding weeks, further rose to 147 last week, of which 89 occurred in Glasgow, 21 in Greenock, 8 in Edinburgh, and 8 in Dundee. The 21 deaths referred to whooping-cough exceeded by 3 the number in the preceding week, and included 16 in Glasgow, 2 in Edinburgh, and 2 in Dundee. The 6 fatal cases of measles showed a slight further decline from those registered in recent weeks, and included 3 in Leith. The deaths from scarlet fever, which had increased from 5 to 12 in the three preceding weeks, declined again to 5 last week, of which 4 occurred in Glasgow. The 4 fatal cases of "fever" corresponded with the number recorded in the preceding week, and included 3 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 71 and 58 in the two preceding weeks, were 62 last week, and slightly exceeded the number in the corresponding period of last year. The causes of 36, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the four preceding weeks from 24·2 to 22·4 per 1000, rose again to 26·5 during the week ending August 14th. During the first six weeks of the current quarter the rate of mortality in the city has averaged 23·5 per 1000, the rate during the same period being 21·2 in London and 18·8 in Edinburgh. The 178 deaths in Dublin during the week showed an increase of 28 upon the number in the preceding week, and included 51 which were referred to the principal zymotic diseases, against 14 and 25 in the two preceding weeks; of these 39 resulted from diarrhœa, 5 from whooping-cough, 4 from "fever," and 3 from scarlet fever. These 51 deaths were equal to an annual rate of 7·6 per 1000, the zymotic death-rate during the same period being 8·5 in London and 4·1 in Edinburgh. The fatal cases of diarrhœa, which had increased from 2 to 18 in the four preceding weeks, rose to 39 during the week. The mortality from whooping-cough and from "fever" considerably exceeded that recorded in any recent week. The deaths referred to scarlet fever, which had been 1 and 4 in the two preceding weeks, declined to 3 during the week. The 178 deaths registered in Dublin included 42 of infants under one year of age and 32 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons were slightly below those recorded in the preceding week. Twelve inquest cases and 6 deaths from violence were registered; and 49, or more than a fourth, of the deaths occurred in public institutions. The causes of 12, or nearly 7 per cent., of the deaths in the city during the week were not certified.

The death-rate in Dublin, which had been 22·4 and 26·5 per 1000 in the two preceding weeks, declined again to 24·3 during the week ending Aug. 21st. During the past seven weeks of the current quarter the rate of mortality in the city has averaged 23·6 per 1000, the rate during the same period being 21·6 in London and 18·5 in Edinburgh. The 163 deaths registered in Dublin during the week under notice showed a decline of 15 from the number in the preceding week, and included 39 which were referred to the principal zymotic diseases, against 25 and 51 in the two preceding weeks; of these, 31 resulted from diarrhœa, 3 from scarlet fever, 2 from whooping-cough, 2 from "fever," and 1 from measles. These 39 deaths were equal to an annual rate of 5·8 per 1000, the zymotic death-rate during the same period being 7·7 in London and 2·7 in Edinburgh. The fatal cases of diarrhœa, which had increased from 2 to 39 in the five preceding weeks, declined to 31 last week. The deaths referred to scarlet fever, which had been 4 and 3 in the two preceding weeks, were again 3 last week. The mortality from whooping-cough and from "fever" showed a decline from that recorded in the preceding week. The 163 deaths in Dublin last week included 48 of infants under one year of age, and 28 of persons aged upwards of sixty years; the deaths of infants showed a further increase, while those of elderly persons showed a slight further decline from those recorded in recent weeks. Seven inquest cases and 4 deaths from violence were registered; and 55, or rather more than a third, of the deaths occurred in public institutions. The causes of 10, or more than 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-LIEUTENANT-COLONEL CALEB K. POWELL retires on retired pay. The under-mentioned Surgeon-Majors to be Surgeon-Lieutenant-Colonels: William T. Johnston, Abraham W. Browne, Robert D. Hodson, Hugh C. Kirkpatrick, John Armstrong, William W. Kenny, Philip M. Ellis, and James F. Brodie. The under-mentioned Surgeons on probation to be Surgeon-Lieutenants: Stevenson Lyle Cummins, Joseph McArdle, Charles Hensley Hopkins, Lewis Julius Christopher Hearn, Peter McKessack, John McDonald McCarthy, Ernest Brodribb, John Poe, Henry Lawrence Weekes Norrington, Hamilton George Frampton Stallard, Robert Dalkeith Jephson, and Arthur Winniett Nunn Bowen.

Surgeon-Captain C. J. W. Tatham will embark for service at Mauritius next month. Brigade-Surgeon-Lieutenant-Colonel F. Lyons has joined at Colchester for duty.

INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Surgeon-Captain J. Gould (Bengal) are replaced at the disposal of the Military Department, and also those of Surgeon-Captain Cleveland (Bombay), Surgeon-Captain Seton (Bengal), Surgeon-Lieutenant James

(Madras), and Surgeon-Lieutenant Dee (Madras). Surgeon-Lieutenant-Colonel Cook is appointed to be Surgeon, 3rd District, Madras, in succession to Brigade-Surgeon-Lieutenant-Colonel H. J. Hazlett, retired. Surgeon-Lieutenant-Colonel G. L. Walker to be Surgeon, 1st District, Madras, and Medical Inspector of Emigrants, vice Surgeon-Lieutenant-Colonel Cook. Surgeon-Lieutenant-Colonel W. A. Lee is appointed to be District Medical and Sanitary Officer, Tanjore, vice Surgeon-Lieutenant-Colonel G. L. Walker. Surgeon-Major J. C. Marsden is appointed to be District Medical and Sanitary Officer, South Arcot, vice Surgeon-Lieutenant-Colonel W. A. Lee. Surgeon-Major A. J. O'Hara is appointed to be District Medical and Sanitary Officer, Godavery, vice Surgeon-Major J. C. Marsden. Surgeon-Major W. F. Thomas, M.D., is appointed to be District Medical and Sanitary Officer, Cuddapah, vice Surgeon-Major A. J. O'Hara. The services of the undermentioned officers are replaced at the disposal of the Government of India, Home Department:—Surgeon-Captain W. P. Barter, A.M.S., Surgeon-Lieutenant E. R. Steel, A.M.S. The services of Surgeon-Lieutenant F. Wall (Madras) are placed temporarily at the disposal of the Chief Commissioner of the Central Provinces for employment on famine duty. Transfers:—Surgeon-Captain C. Thomson, Supernumerary Civil Surgeon, from Aligarh to Fatehgarh. Surgeon-Lieutenant C. B. Harrison, on plague duty, from Agra to Jhansi. Surgeon-Lieutenant C. H. Bensley, on plague duty, from Cawnpore to Meerut. Surgeon-Captain A. W. Dawson from plague duty at Hardwar to that at Saharanpur.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Staff Surgeons: William E. Horne, M.D., B.Sc., to the *Tamar*; Richard A. Fitch to the *Barrosa*; Henry B. Beatty to the *Royalist*; William Spry to the *Calypso*; Robert Hickson to the *Philomel*; John Lowney to the *Melampus*; and Cyril J. Mansfield, M.D., to the *Hotspur*. Surgeons: Charles S. Facey, M.B., to the *Pembroke*, and Louis E. Dartnell to the *Triton*.

Staff Surgeon Henry William Duffield Walsh has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet.

ARMY MEDICAL RESERVE OF OFFICERS.

The under-mentioned officers having resigned their Volunteer appointment, cease to belong to the Army Medical Reserve of Officers:—Surgeon-Lieutenant-Colonel Thomas Michael Dolan and Surgeon-Captain John Cunningham.

VOLUNTEER CORPS.

Artillery: 2nd Cheshire (Railway): James Reginald Atkinson, gent., to be Surgeon-Lieutenant. *Rifle:* Galloway: Surgeon-Captain R. Bell Lorraine resigns his commission. 1st Volunteer Battalion the Hampshire Regiment: Surgeon-Lieutenant W. A. Griffiths to be Surgeon-Captain. 19th Middlesex (St. Giles's and St. George's, Bloomsbury): Surgeon-Captain Alexander MacGregor, M.D., from the Volunteer Medical Corps (Aberdeen Company), to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The Aberdeen Company: The resignation of Surgeon-Captain A. MacGregor, is cancelled.

THE INDIAN NEWS AND THE MEDICAL SERVICES.

It has often been said that the British are a warlike but not a military people, and we certainly generally manage to be engaged in some small war or other. At the present time we have many expeditions and wars on our hands. On the Indian frontier there is the expedition in the Chitral-Swat district, that in the Trochi valley, and the tribal outbreak on the Khyber-Peshawar border, to say nothing of the Nile expedition in the Soudan, the fighting in South Africa and in other parts of the world. The fact is that our empire is so extensive and widely spread that it is nearly hopeless to expect there will be peace throughout the whole extent of our territories at any given time; it is one of the responsibilities of our position that we must always be ready to meet and repel an attack somewhere or other. By far the most important news at the present time comes from India regarding the serious outbreak of the tribes, and especially of the large and powerful tribe of Afridis, in the Khyber Pass, and of their attack in force on the posts in the immediate vicinity of Peshawar. That the Government of India regard the situation as serious and the disaffection as likely to spread to other places and tribes on the frontier, and give rise to much future trouble and expense, is clear from the large force that has been concentrated on the frontier generally and in the vicinity of the Khyber Pass, at Khohat, and other places. Those medical officers who took part in the last Afghan wars will be familiar with the country and with the names of the posts and districts occupying a more or less prominent place in the descriptions that are appearing in the papers regarding these tribal revolts. It is nearly certain that the Ameer of Afghanistan has taken no active part whatever in these outbreaks; the most that can be said is that he does not seem to have shown any alacrity in warning the Indian Government or in attempting to repress them. These wars on the frontier are not to be reckoned as a source of any serious danger to our power in India, so long as they are not so successful as to damage our prestige, but they are very costly and embarrassing. We have now a large and splendid European army in India, and the native army is in a high state of efficiency, reliable and well-affected to the Indian Government, its main source of weakness being that it is greatly under-officered as far as British officers are concerned. All the medical officers on leave in this country from India have been recalled. The work imposed upon the medical officers of both the British and Indian services is unusually arduous, and it behoves the War Office authorities in this country to lose no time in doing all they can to render the Army Medical Service more attractive to candidates, for medical officers must be greatly required under existing conditions in India.

THE POONA ALLEGATIONS.

It is an old story now, but we do not think that the retractation of Professor Gokhale could be put more strongly or succinctly than it was in his telegram to H.E. the Governor of Bombay, preliminary to the reception of his more extended report: "Have just posted full statement containing explanation, full retractation, and unqualified apology." Lord Sandhurst, the Governor of Bombay, in closing the late Budget discussion, according to the *Times of India* of the 6th inst., made a strong statement vindicating his policy with regard to the plague. The continued prevalence of plague and famine had strained, not only the powers, but the utmost possibilities of the administration of the Government. His lordship characterised the statements that had been made against the action of the authorities as ridiculous, ruthless, and heartless allegations. The operations for the suppression of the plague in Poona were carried out with the utmost regard to decency and the feelings of the people.

DEATHS IN THE SERVICES.

Surgeon-General William Henry Muschamp (retired), aged sixty-four years, on the 21st inst. He entered the service in 1855 and served in the Crimea, being present at the siege and fall of Sevastopol and the attack of Sept. 8th, 1855 (medal with clasp and Turkish medal). He served also in the North-West Provinces in suppressing the Mutiny of 1857-58, and was present at the operations at Cawnpore, the actions of Kali Nadi and Khankur, the capture of Bareilly, the relief of Shahjehanpur and the affairs of Mahomdi, Shahabad, and Bunkagahon (medal).

ENTERIC FEVER AT CHERAT.

The *Times of India* reports that there has been a severe outbreak of enteric fever at Cherat. One officer, fifty men, two women, and a child are in hospital from that disease.

SURGEON-CAPTAIN P. HEHIR.

The Bombay Government have refused the extension of this officer's services for five years in the Nizam's State, and he consequently reverts to the Bengal Medical Service.

THE MERTHYR TYDVIL GENERAL HOSPITAL.—The half-yearly meeting of this hospital was held on Aug. 12th. The report showed that during the half year ended June 30th 100 in-patients had been admitted. The balance standing to the credit of the institution on Jan. 1st was £429, and £571 had been received since then, making a total of £1000. The expenditure for the six months amounted to £800. It was stated that of the £10,000 proposed to be raised for the endowment of the Diamond Jubilee Ward only £1000 was still required to make up that amount.

Correspondence.

"Audi alteram partem."

"HOSPITAL ABUSE."

To the Editors of THE LANCET.

SIRS,—Will you kindly announce that we are organising a conference on the hospital reform question and that we propose to deal more especially with the administration of the out-patient department and with the formation of a Central Hospital Board? The dates provisionally fixed are Oct. 20th and 21st. Sir Henry Burdett and Mr. C. S. Loch have already expressed their willingness to take part, and I should be glad to hear from others who would like to do so also.

I am, Sirs, yours faithfully,
T. GARRETT HORDER,
Honorary Secretary, Hospital Reform Association.

Cardiff, Aug. 17th, 1897.

To the Editors of THE LANCET.

SIRS,—I also fail to understand the charges of unfairness directed at your Special Commissioner, whose accurate gauge of the present situation and also the able manner in which he has presented every side of the question is to be commended. Undoubtedly the enemies of the medical profession are to be found in its own ranks, as instance the deplorable fiasco, the moribund Leicester Medical Union. The committee rejected the resolutions of the sub-committee; they then formed deputations to wait upon every dispensary and club management, and even then some benefit would have accrued if some five or six medical officers to the provident dispensary, whilst yet being members of the said union, had not met privately at one of their own houses and drew up a resolution requesting the manager of the provident dispensary to notify some twenty odd of their fellow medical officers to this effect—viz., that if they were not satisfied to tender their resignation. So that these few dealt the death-blow to the said union and reinstated their manager again, directly and indirectly, master of the local medical profession.

I am, Sirs, yours faithfully,
ERNEST WILLIAM HAYDON, M.B. Glasg.

Leicester, Aug. 23rd, 1897.

"AMYLACEOUS DYSPEPSIA."

To the Editors of THE LANCET.

SIRS,—Since the introduction of taka diastase some attention has been given to amylaceous dyspepsia; but the indiscriminate praise which is being given to that drug, of which Dr. Taylor's paper in THE LANCET of Aug. 7th is an example, can only lead to its indiscriminate use and subsequent neglect. The great fault of the papers on this form of dyspepsia is that they say nothing about its cause, not a single word as to why the fermentation began originally. And the treatment of the disease is as defective; the main advice is to use taka diastase, and in a secondary, half-hearted way we are advised to look after the eating and the drinking. Fenwick strongly advises a man whenever possible to get at the cause, as in treatment a knowledge of the cause is at least as important as the diagnosis, and this is especially true of the diseased conditions known as dyspepsia. Does the defect lie in the quantity and quality of the food, or in the saliva, the teeth, or the stomach? If the saliva be deficient, as, for example, in fevers, give taka diastase; but as it has never been shown to be deficient in dyspepsia there must be some cause for its defective action during the period that intervenes before the HCl is in sufficient amount to stop its action. The causes of amylaceous dyspepsia are bolting the food, badly chewed food where the teeth are rotten and deficient, badly cooked pastries (in these three conditions the saliva never gets intimately mixed with the food), and pastry made from rancid butter or lard when the butyric acid is carried ready made into the stomach. It is easy to see that taka diastase alone must be of very temporary benefit, and that the treatment must begin with removal of the cause, and the defect pointed out to the patient. Not long ago I saw two patients in consultation who had had all kinds of drugs administered to them for their dyspepsia (one gentleman had got tired and had given up drugs), but whose teeth had never been looked at. In these two, as in many others in the past, cure was attained by attention to eating, no drug except a bismuth lozenge being used (Sir W. Roberts's method, but not his lozenge, which I have found inferior to the ordinary bismuth lozenge). New teeth must be ordered when necessary, bolters must chew their food dry, flesh meat must in many cases be minced, the quantity of starchy matter and sugar decreased in others, and in all no tea must be drunk, not even tasted, till the end of the meal. Taka diastase will aid and will often be of more use than a dinner pill. To turn for a moment to a physiological question. Dr. Boyd speaks of the products of the digestion of starch by taka diastase being absorbed by the stomach. Does this take place? Does it not rather take place, if not altogether, at least to a very large extent in the intestines?

I am, Sirs, yours faithfully,
JAMES GARDNER.

Chorlton-on-Medlock, Manchester, Aug. 25th, 1897.

"A NOTE ON ARTIFICIAL PUPIL."

To the Editors of THE LANCET.

SIRS,—Dr. Bell Taylor is usually so well informed in all ophthalmic subjects that I confess to a feeling of surprise when I find him indulging in ancient history in his note on artificial pupil in THE LANCET of Aug. 14th. The operation which he there describes was performed by my late father as far back as 1867, and he subsequently used it on many occasions within my knowledge. I have operated by this method both in my hospital and private practice for more than twenty years, and I have every reason to believe that it has long been in general use amongst ophthalmic surgeons.

I am, Sirs, yours faithfully,
G. ANDERSON CRITCHETT.

Harley-street, W., Aug. 14th, 1897.

WHAT IS THE CAUSE OF DIPHTHERIA?

To the Editors of THE LANCET.

SIRS,—Where does diphtheria originate? and why is it that with all the advance in sanitary reform that has been made in the last twenty-five years the disease is on the increase? These two questions need answering if further progress is to be made with this particular disease. I believe the answer to the second question to be that microscopic investigation has been directed to material derived from the patients instead of material taken from their surroundings.

We all know that in some way or other dampness is a factor in producing the disease. I remember reading in THE LANCET many years ago a letter from one whose name I forget pointing out a connexion between stable manure and diphtheria. Eight years' country practice in a district where the disease only occurred sporadically convinced me that after a flood had dried up, the disease was more rife than at other times. Seven years' suburban practice in a district that may be described as marsh land covered in convinced me still more that damp was the great *causa causans*. I am now living in flat land where vegetable refuse is supposed to be burned, but is not. On the contrary, it is put down dust shoots and thrown into small back-yards to fester and decay. In the streets at night there is a sour smell of decaying vegetable matter suggestive of an old-fashioned farmhouse pig-cistern. The district is frequently attacked by diphtheria. The solution of the problem contained in the first question seems to me to be $d + D = \Delta$, or in the vernacular, damp and decaying vegetable matter cause diphtheria. I believe that if bacteriologists will seek material in dust bins and decaying vegetable matter where cases of the disease occur, before long they will find the breeding-place of the diphtheria bacillus and we shall then have a complete answer to question No. 1. If this be right it should be noted that the increase of the disease coincides in date with the introduction of flats into London; I believe this was after the 1867 Paris Exhibition and a direct consequence of it. Dust shoots and bins ought to be abolished and all dust collected every day by the bucket system. I have known a dead dog to be put down a dust shoot here and be left for a week. I have ignored the

question of infection, as that is generally recognised, but would point out that cats must not be overlooked as carriers.

I am, Sirs, your faithfully,

VERE G. WEBB, L.R.C.P. Irel.

New Kent-road, S.E., Aug. 18th, 1897.

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to state that I am not the Dr. Aveling who spoke at the Anarchist meeting in Trafalgar-square last Sunday?

I am, Sirs, yours faithfully,

CHARLES T. AVELING, M.S., M.D. Lond.

Cedar House, Stamford-hill, N., Aug. 25th, 1897.

UNQUALIFIED ASSISTANTS.

To the Editors of THE LANCET.

SIRS,—The perennial question of the unqualified assistant has again elevated its head. Without raising the many vexed issues which have been argued with such acerbity I would venture to draw attention to one class of unqualified practitioners which has not received adequate notice. I am a medical practitioner living in a very highly rated parish in West London. If an accident occurs within a few yards of my door, and the victim falls into the hands of the police, he or she is at once "treated" in accordance either with the preconceived notions of surgery of the active and intelligent constable or with such knowledge as First Aid learning may have imparted. But it appears to be a canon with the force to avoid calling in qualified medical aid where by any possible means this can be done. Should any unfortunate result accrue to the patient no notice is taken of the fact that the preliminary treatment was applied not merely by an unqualified but by an amateur surgeon. If, on the other hand, the patient were brought to my surgery, and by any chance in my absence were to be attended by an unqualified assistant, skilful and as perfectly competent as many men in practice, and any mischance of whatever kind eventuated, an outcry would at once have been raised as to the employment of the unqualified assistant. There is also a further view of the case. Departmental ideas, whether local or otherwise, upon this subject do not always synchronise with the practice of the departments. To take a concrete case. On the Saturday preceding Bank Holiday my unqualified assistant saw a case which proved to be scarlet fever. He immediately referred the matter to me, and I, diagnosing the case, informed the parents that it required either isolation or removal to hospital, giving them, of course, the option, but informing them that in any case I must notify it. I notified it; but though I am to a certain extent anticipating, I may say that my notification, posted in due observance of the law on the Sunday, was received and opened only on Tuesday morning. In view of possible complications which might have arisen, and also in view of some which did arise recently in a somewhat similar case in which I was to a certain extent—by implication, at least—concerned, I took measures to have the case removed at once. The curious part of the whole matter is that the medical officer of health who took high ground recently when the unqualified assistant question was a feature in the case, but where his own department was proved to demonstration to be utterly and hopelessly in the wrong, has now left the professional work of his department to an *unqualified assistant*. Wanting information as to the propriety of notifying certain doubtful cases in connexion with a very high death-rate (about 70 per 1000), I was told I could not see the medical officer till his return from a six weeks' holiday, but I might see his chief clerk. I draw no inference. I enclose my card.

I am, Sirs, yours faithfully,

Aug. 24th, 1897. A QUALIFIED PRACTITIONER.

IT has been decided by the committee of management of the Westminster Hospital to entirely close their out-patients' department for the purpose of renovation and repairs, from Aug. 23rd to Sept. 18th, both days inclusive. The out-patient department of the Royal Free Hospital is also closed until Sept. 1st, and St. Mary's Hospital is entirely closed until the end of September

THE BRUSSELS INTERNATIONAL EXHIBITION.

(FROM A SPECIAL COMMISSIONER.)

WHAT with numerous congresses, the exhibition, and the fine weather, Brussels is crowded with visitors. The town looks all the more animated as the authorities have decorated the main streets leading to the exhibition with festoons, flags, banners, some gilt plaster statues, and coloured electric lights. Twice or three times a week there are illuminations. Under these circumstances it is not surprising that many persons have selected to spend a part of their holidays at Brussels. The exhibition is, of course, small when compared with the great international exhibitions of Paris, but it is large enough to thoroughly exhaust the visitor, especially if he desires to see everything in the course of two or three visits. It is large enough also to comprise an important section devoted to hygiene and a good many exhibits of surgical instruments and pharmaceutical products. The members of the profession, therefore, who visit Brussels may combine utility with pleasure, for they will find at the exhibition several things of technical interest. Unlike many other exhibitions, that of Brussels is of easy access. The town is admirably provided with a network of electric and ordinary trains, so that speaking generally the exhibition can be reached with little waiting or crowding and at but small expense.

On entering the grounds by turning to the right the visitor reaches the main building through a number of minor structures, which are, for the most part, cafés and restaurants, where, and also in contra-distinction to other exhibitions, meals can be obtained at moderate cost. Behind these there is a small oriental bazaar where the sounds of wild Arab music are to be heard and Moorish women dance. On the way to the main building there is also a separate and large circular structure, occupied exclusively by the French food section. Here may be seen how the French have imitated English biscuit manufactories, how the trade in preserved and tinned meats and vegetables has been developed, and there are also specimens of olive oil, wines, cognacs, &c.

Entering the main building by one of the smaller doors close at hand, and which is inscribed Bosnia and Herzegovina, the visitor is at once in the Austro-Hungarian section, and can note what care has been taken to develop these Serb provinces, now annexed by the Austrian Empire. On the walls large paintings give some idea of the beautiful scenery of these provinces, and show that they are likely to become favourite resorts for future tourists. Of the artistic products of Austrian industry—glass, pottery, carpets, furniture, and fancy articles—I need not speak. It is known that the *article de Paris* is often made in Vienna, and I allude to this section merely to say that the section of hygiene is situated immediately behind. The exhibits of the Ghent Bacteriological Institute deal principally with the analysis of meat and the bacteria found in some ham which had caused an epidemic in 1895. There are photographs of various animals taken after injections of an infusion of this meat. On the same spot the Belgian Temperance Society makes a brave show of sensational pictures and sections of the human liver so as to forcibly illustrate the evils of alcoholism. Then there are various models of masks to be worn by workmen engaged in dangerous industries, while the Belgian manufacturers of surgical instruments show how they apply antiseptic principles. For the operating-room furniture they seem to prefer copper or brass to nickel. Stools for the operating surgeons are made like piano stools, screwing up or down. The seat is a round concave sheet of brass, and the leg is partly brass and partly nickel. The tables, shelves, &c., are, of course, of plate-glass. To the operating table can be affixed a carefully cast copper seat that can be passed under the patient's back so as to raise the pelvic region while the subject is still lying down. The sanitarian will be interested to note in this section how Belgian manufacturers have imitated the well-known models of English drain-pipes, traps, &c., including methods for applying the smoke-test to household drains. There are also some Belgian pharmaceutical specialities and a carriage used by the Brussels town authorities for conveying the insane. It is in the shape of a small omnibus, and the front

part is divided into two padded compartments. The windows are of a special ground glass, of double thickness and unbreakable.

To the left of this section, close by, but walled off, are the extremely important and complete exhibits of the Ministry of Agriculture and Public Works. Here the Belgian Government show a model State laboratory and the measures taken for the enforcement of the various laws dealing with public health, and notably the prevention of the adulteration of food. To describe these exhibits would be to review the whole Belgian Legislature on the subject, and an entire volume might be written on such a topic. Fortunately there is a great deal of literature distributed here, so that the visitor can carry away with him the text of various laws, with details as to their application, so as to study them at his leisure. Thus, for instance, he can secure an official circular on the law of Nov. 18th, 1894, in which it is said that milk offered for sale must not be placed in leaden tins or metallic tins that have a lead alloy, such as certain forms of zinc. Article I. stipulates that milk from which cream has been removed must only be exposed for sale in receptacles bearing inscribed in large letters the words *lait écrémé*. The laws relating to beer, wine, meat, &c, are likewise set forth in printed circulars, which are at the disposal of the public, and thus visitors to the exhibition have a good opportunity of ascertaining what is the law on these subjects.

In the galleries that surround the vast hall devoted to machinery in motion there is another hygienic and social reform department. Here the French have a large demographical section with many charts and diagrams dealing with death-, birth-, and marriage-rates. Labour statistics, details as to charitable institutions, such as night asylums, *crèches*, &c., abound here. The French society for the better housing of the poor cover several partition walls with their drawings and plans. Other drawings, more especially connected with hygiene, illustrate plans and schemes for the draining and the water-supply of large towns. Among these I noted a scheme by M. Tusson, civil engineer, dealing with the town of Antwerp much on the lines which were indicated in the articles in THE LANCET on the cholera epidemic which prevailed a few years ago in that town. There is also a variety of drawings of public and private buildings which, though placed under the denomination of sanitation, are in reality of more interest to the architect than to the hygienist, for most of these drawings contain no indication whatsoever of the methods of either ventilation or drainage it is proposed to employ. By far the best are the coloured drawings of the drainage scheme now in course of application to the town of Marseilles and those already mentioned, which it is proposed to apply to Antwerp. In both cases it is easy to see what is meant. In this gallery will also be found a vast exposition of diagrams and statistics setting forth the working of the workmen's compulsory insurance laws in Germany.

The military exhibits are very extensive, and several nations give specimens of field ambulances. The Red Cross Association of French Ladies has a large exhibit of its methods of training nurses and of providing help in cases of accidents and in the event of war. Among their equipment porous flannel shirts are in great demand, especially for the colonies. A convenient shirt for the wounded is also shown. This opens down one side and is fastened with tapes. No buttons are allowed, as it is sometimes difficult to fasten a button over a wound. All furniture is non-porous and easily pulled to pieces. Here also is a model of Dr. Gruby's tent. The metallic framework and the canvas weigh 2120 kilogrammes. The tent contains fourteen beds, and has two small separate compartments at each end. The Belgian Red Cross Society have established a working ambulance in a court close by. It is made by Messrs. Christopher and Unmack, of Copenhagen. The walls are of painted canvas stretched over a wooden framework. As there are two coatings of canvas the wall feels as if it were rather more than an inch thick. The separate rooms for the pharmacy and the surgeons are placed in the middle of the oblong tent. Thus the far end is well separated from the side where the sick or wounded are brought in. Three beds are ready in the event of any serious cases and the patients can be kept away from noise or disturbance in the further compartment. A nurse and medical men are in constant attendance, and of course there are stretchers and bearers at hand.

In another similar small inner court a variety of drain-pipes, gullies, and sections of sewers are exhibited; but I failed to notice anything new, though I did see several old and bad models. There are also numerous earth and peat closets with seats, which under the pretext of cleanliness seemed to realise the maximum of discomfort. Various filters are likewise shown here. In the main building, scattered in different directions, are different models of scaffolding, &c, devised in the hope of preventing accidents to workmen. Among these there is a ladder, "La Prévoyante" employed for window cleaning. Within the room it opens out and forms a letter V reversed; but if turned upside down two iron hooks enable the servant to hitch the point of angle made by the ladder to the window-sill. The steps of the ladder then protrude upward outside of the window and form a framework which prevents the window-cleaner from falling in the street. The Association of Belgian Manufacturers for the Prevention of Accidents have a model engineer shop worked by steam power and various styles of machinery all in motion, but so protected and guarded as to render accidents most unlikely if not impossible. This practical illustration of well-known theories is most interesting and to the point.

It cannot be said that the British section is very remarkable, at all events from the medical and sanitary point of view. Of course, there are the well-known tabloids of Messrs. Burroughs, Wellcome, and Co.; and considering the interest taken in Belgium in the colonisation of the Congo the adaptability of this form of pharmacy to tropical regions is well set forth. They have added some micro-photographs of cultures from their physiological laboratories and a general display of chemical substances used for pharmaceutical purposes. Close by Messrs. Ronald and Sérin, sanitary engineers, show how they apply Jennings' well-known sanitary apparatus to Belgian houses. John Dammock and Co. have also much enameled and porcelain sanitary hardware which is very elaborately decorated with floral designs.

In regard to education both in the French and Belgian sections there are many exhibits of interest. One in particular consists of a Belgian school of housekeeping, with a number of young girl pupils hard at work. Some are ironing, others are mending linen, and others are engaged at various household duties that all so largely contribute to maintain the comfort, happiness, and health of the home. This is a phase of education and a form of exhibit that greatly deserves encouragement. Of course there are numerous mineral waters and sanitary drinks to be found in different directions. Moreover, there is furniture for invalids, for field hospitals, and for tropical countries. In fact, it would be difficult to enumerate all that is of interest to the medical practitioner and to the sanitary reformer. Enough, perhaps, has been said to make it manifest that there is something to be learnt by a visit to the Brussels exhibition. As the means of communication are easy, the journey from England short and inexpensive, and life in Brussels is cheap and pleasant, there can be but little doubt that many persons will be tempted to avail themselves of these facilities and inducements.

Brussels, Aug. 15th.

PROFESSIONAL PROSPECTS IN ITALY.

(FROM A CORRESPONDENT.)

As a place of resort for the invalid or convalescent the future may well-nigh be said to belong to Italy. She has numberless sun-traps with marine or mountain exposure in winter; she has delightful airing grounds in the Apennines and on her sub-alpine slopes during summer; while her spring and autumn, particularly the months of May and October, are as nearly perfect for the robust or the weakly alike as are to be had in the temperate zone. Add to this that she is exceptionally rich in mineral waters, mud-baths, and thermal springs, and the result is an *ensemble* of conditions that put her at a singular advantage over other nations of Europe. Of her other attractions for the votary of art, literature, and even science there is no need now to speak.

But she has tremendous lee-way to make up before civilisation can reap the full benefit of those advantages and before she herself can draw from them the pecuniary return she requires so sorely. Out of the beat of tourist resort she

is little better than mediæval in hotel accommodation, appointments, and *cuisine*; while even at her recognised and frequented health resorts she is so far behind trans-alpine Europe that the superiority she owes to nature over her rivals is more than neutralised by the defective conditions referred to.

Still she is making progress in many ways, and the next century cannot be much beyond its teens before she has put herself level with contemporary civilisation.

One stimulating element in this direction is the presence of the English-speaking world and the representatives of English-speaking practice in her midst. By the admission of her more competent and most candid public men of all professions, she owes much to the object-lessons in civilisation imported especially from the British empire. To minimise or even materially to reduce that invigorating and refining influence, it might be thought, would be the last thing her legislature should attempt. And yet, if an agitation now proceeding in her professional circles and already making itself felt in her parliament takes practical effect, she will do herself the great injury of deterring the English-speaking world from visiting her shores, and with it all the influences, refining and invigorating, just indicated.

The agitation in question concentrates itself in the so-called Santini Bill for excluding English-speaking practitioners from the English-speaking world, resident or migratory, she annually receives. That measure, already in its initial stages before the Camera dei Deputati, has frequently been commented on in the columns of THE LANCET, and the later, maturer opinions formed of it inside and outside the profession are not favourable to its becoming law. Signor Serena, Under Secretary of State in the Department of Grace and Justice, in his replies to Dr. Santini's interpellations, seems unwilling to commit the Government to more than to the exclusion of English-speaking practitioners from Italian *clientèles*. He has no objection to the continuance of the existing arrangement by which the English-speaking world shall have the power of calling in compatriot medical advice. In other words, he is by no means inclined to make Italy follow the ungracious lead of Switzerland and France, and render it impossible for English-speaking patients to avail themselves of English-speaking consultants.

This is as it should be, but it remains to be seen whether the Di Rudini administration adheres to the enlightened policy embodied in Signor Serena's replies, or whether it will yield to the pressure under which all Italian ministries are apt to become pliable. For one thing, Signor Serena seems to have mastered the situation so far as to appreciate the active and powerful opposition the Bill will encounter from the commercial, the hotel-keeping, the railway, and similar interests, deriving, as these do, so essential a part of their revenue from the English-speaking visitors and residents. Meanwhile, as matters stand, Italy remains a tempting field for the young British or American practitioner. Indeed, the presence of such a duly qualified medical adviser is often of itself sufficient to determine the tourist or valetudinarian public to resorts having every other attraction that nature can vouchsafe. A case in point is that of Sicily, whose recommendations as a winter residence for the weakly or the ailing, often vaguely surmised, have now been beyond cavil established in the columns of THE LANCET. The accommodation demanded by the civilised world and the presence of such practitioners as the British-American schools annually produce alone seem wanting to redeem that "island of Prospero" from the financial and other straits she has so long laboured under. And what is true of Sicily is true of Italy as a whole.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce that they have recently published the sixth edition of "The Theory and Practice of Surgery," by W. J. Walsham. The book has been increased by 50 pages, though the price remains the same. Other new editions just ready include the third of Hartridge's Ophthalmoscope and the fourth of Clowes' and Coleman's Quantitative Analysis.—The Rebman Publishing Company, Limited, London, and Mr. W. B. Saunders, Philadelphia, will issue shortly an entirely new work on "The Diseases of Women," written for students and practitioners by Mr. J. Bland Sutton and Dr. Arthur E. Giles. The book will be profusely illustrated with woodcuts, most of which have been drawn expressly for it.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Sewage Again.

THE continued recurrence of the sewage question, the stringent but justifiable requirements of the Mersey and Irwell Joint Committee, the pitiful position of the Manchester Corporation, distracted by ever-varying counsels, which sometimes advise one course and then urge another, have by this time become familiar and probably wearisome to those who take any interest in municipal or sanitary questions. A short time ago artificial filtration seemed to be in favour as against the scheme of a culvert to the estuary of the Mersey, but the annual cost of the working, and the renewal of the filters every three or four years, would involve an estimated annual outlay of £31,820, to which the majority of the Rivers Committee of the corporation are opposed, and a sub-committee unanimously decided to recommend to the Rivers Committee that the effluent, after chemical treatment, should be taken to the tidal waters of the Mersey. This means that the Ship Canal will be deprived of the six or eight million gallons of purified effluent which should flow into it daily. In the meantime, the period of a year allowed by His Honour Judge Parry to the corporation for the preparation of a scheme having almost expired, the corporation asked for six months more grace, and have been granted three months. While all this time is being spent the river and the Ship Canal remain in a condition so foul and disgusting as to be a disgrace to a civilised people. Unfortunately, however, civilised people, so-called, do not appear to care about some of their surroundings more than, if so much as, many so-called savages, for where chemical industry and the mechanical arts are found the streams are invariably polluted and filthy.

Libel by an Insane Patient.

Mr. Mould, the superintendent of the Cheadle Asylum, has recently been the subject of libellous proceedings on the part of a former patient, who was brought up on remand before Mr. Headlam, the Manchester stipendiary, on the 18th inst. for publishing libels on Mr. Mould. Such an occurrence is one of the amenities to which superintendents of asylums sometimes become accustomed. In this case he was associated with Mr. Harley, the postmaster of Manchester, and Mr. Malcolm Wood, the chief constable of the city. The defendant said, as usual, that he was perfectly sane and the victim of a foul conspiracy, and proceeded with an excited harangue. In the end the poor fellow had to be removed and was afterwards conveyed to an asylum.

The Food Question in Workhouses.

A discussion took place at the meeting of the Prestwich guardians on the 19th inst. on a resolution proposing that an inquiry should be made as to the waste of food, if any, at the workhouse and the manner in which it is served. The chairman said that by the regulations of the Local Government Board the food had to be weighed and a certain quantity served to each inmate. One of the guardians instanced the Chorlton Workhouse, where "tons of bread were wasted at table," and the Local Government Board refused to sanction a system by which this might be avoided. The resolution was adopted.—At the meeting of the Chorlton guardians on the 20th inst. the chairman, Dr. J. M. Rhodes, alluded to the statements made at the meeting of the Prestwich board, and said they were carrying out the system started four months ago and did not intend to alter it. The Local Government Board had difficulties. There were some boards of guardians "whose main object seemed to be to screw expenses down and where there were workhouse masters bent on a stringent policy." It may be hoped, however, that the experiences of Oliver Twist could not now be repeated in the most unsympathetically managed workhouse in the kingdom. Dr. Rhodes also stated that the Local Government auditors found that the new system was less costly than the old, and that the Board was coming round to their view. He believed "that the system they had inaugurated benefited both the ratepayers and the poor" where the departments were under the management of well-paid and efficient officers.

Singular Death.

A washerwoman, aged twenty-five years, living at Weaste, was washing some blankets on the 5th inst. and wished to use

some ammonia. Having some difficulty in drawing the cork she got hold of it with her teeth. It came out suddenly and a quantity of the liquid went into her mouth. She was taken to the Salford Hospital, but died early on the morning of the 9th inst.

Aug. 24th.

WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Proposed Convalescent Hospital for Bristol.

MR J. S. FRY, who had previously subscribed £3000 towards the proposed Convalescent Home for Bristol, has promised to substitute for this an offer of £10,000, provided that £40,000 is raised before Dec. 1st. Sir W. H. Wills has offered to increase his original contribution of £1000 to £5000 with the same stipulations. The balance now required to render the institution self-supporting is £13,000, and doubtless a strong effort will be made to secure these generous donations.

The Bristol General Hospital.

A sum of £1500 has been given by an anonymous donor to the Bristol General Hospital to be devoted towards defraying the cost of the enlargement and reconstruction of the laundry. Since the recent extension of the hospital the laundry and kitchens have been found to be inadequate. The proposed alterations will cost more than the £1500, but it is hoped that other subscriptions will be received.

A Nuisance at Merthyr.

At Merthyr Tydvil police-court on Aug. 9th the proprietor of a candle factory at Caedraw, Merthyr, was summoned for carrying on his business in such a way as to be injurious to the public health. It was complained that the pipe leading from the vat used for melting the fat was in a defective state, and that the shaft into which it was carried was insufficiently high, the result being that noxious smells were emitted. The Bench held that the defendant had not carried on his business with proper care and imposed a fine of £5 and costs.

"Prejudice against the Doctor."

At the last meeting of the Yeovil Board of Guardians Mr. A. W. Sinclair, L.R.C.P. & S. Edin., the surgeon for the South Petherton district, attended and gave an explanation with reference to a complaint made to a lady guardian for South Petherton by the mother of a boy who had recently fractured his leg. It was stated that the medical officer had only visited the lad on three occasions. Mr. Sinclair said that the whole story of his neglect was a fabrication, and proved from the entries in his visiting list that he had attended the boy almost daily until he was removed to the hospital. Mr. Sinclair stated that it was exceedingly disagreeable to him for guardians to show such animus towards him whilst residing in his district, and added that this was the second time he had been accused of falsehood. The board did not think a further statement from Mr. Sinclair was necessary, and passed a resolution stating that there was not sufficient evidence in the case. The Rev. W. D. Armstrong, who strongly supported this, said that he ventured to think there was "some sort of prejudice against the doctor." Mr. Sinclair is to be congratulated on the result of this inquiry, and for the future it is to be hoped that such groundless complaints will not be made by any of the guardians.

Aug. 24th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Visit of the Duke and Duchess of York.

THE visit of the Duke and Duchess of York to Ireland is obviously much appreciated by a large proportion of the population, their Royal Highnesses having been everywhere enthusiastically received. On the 20th inst. addresses were presented to His Royal Highness by the Presidents of the Royal Colleges of Physicians and Surgeons respectively. Sir George Duffey, the President of the Royal College of Physicians, who was accompanied by Dr. Wallace Beatty, Dr. Lombe Atthill, Dr. James Craig, Sir John Banks, Physician-in-Ordinary to the Queen in Ireland, and Dr. William Moore, Physician-in-Ordinary to the Queen in Ireland, read the following address of the Royal College of Physicians:—

"TO HIS ROYAL HIGHNESS, GEORGE FREDERICK ERNEST ALBERT, DUKE OF YORK, EARL OF INVERNESS, AND BARON KILLARNEY.

"MAY IT PLEASE YOUR ROYAL HIGHNESS,—

"We, the President and Fellows of the Royal College of Physicians of Ireland, on the occasion of your present visit to this country beg to offer to your Royal Highness a hearty welcome to Ireland, and a renewed expression of our devoted loyalty and attachment to her most gracious Majesty the Queen.

"We would also assure you of the great gratification we feel that you have been pleased to honour Dublin with your presence at so memorable a time as this, when we have been celebrating the completion of the sixtieth year of the Queen's reign.

"We desire also most respectfully to express our satisfaction that you are accompanied by her Royal Highness the Duchess of York, sharing as we do most warmly in the feeling of attachment with which all loyal citizens welcome the visit of members of a Royal Family so universally and justly beloved.

"Signed on behalf of the College.

"GEORGE F. DUFFEY, M.D., Knt., President.
"JAMES CRAIG, M.D., Registrar."

Sir William Thomson, the President of the Royal College of Surgeons, read the following address on behalf of that body. He was accompanied by Dr. A H. Jacob, Mr. Henry Gray Croly, Mr. W. I. Wheeler, Sir Thornley Stoker, and Mr. H. R. Swanzy:—

"TO HIS ROYAL HIGHNESS, GEORGE FREDERICK ERNEST ALBERT, DUKE OF YORK, K.G.

"MAY IT PLEASE YOUR ROYAL HIGHNESS,—

"We, the President, Vice-President, and Council of the Royal College of Surgeons in Ireland, beg most respectfully to offer to your Royal Highness and to the Duchess of York a cordial welcome on the occasion of your visit to our country.

"As a member of the family of Her Majesty, our revered Queen, and as the lineal representative of their Royal Highnesses the Prince of Wales and the Princess of Wales, your advent to Ireland affords us great satisfaction, and will, we believe, be received as a manifestation of your desire to acquire that personal knowledge of Her Majesty's Irish subjects which can only be obtained by direct observation. We are convinced that frequent association of your Royal Highness and other members of the Royal Family with our people will be attended by the most beneficial results by confirming and increasing the attachment of this country to the Throne and by maintaining in the Royal Family a warm interest in the prosperity of Ireland.

"We beg further to assure your Royal Highness of the determination of our College to aid in maintaining in the future as in the past those loyal and dutiful relations with Her Majesty and her august Family which have hitherto existed.

(Signed) "WILLIAM THOMSON, President.
"ROBERT L. SWAN, Vice-President.
"CHARLES CAMERON, Secretary of the College.
"ROBERT H. WOODS, Secretary of Council.
"GEORGE F. BLAKE, Registrar."

The Mater Infirmorum Hospital, Belfast.

The Belfast and County Down Railway Company, at their half-yearly meeting, held on Aug. 10th, agreed to subscribe £200 out of the revenue of the company, to the fund for the erection of the Mater Infirmorum Hospital.

Belfast District Lunatic Asylum.

Dr. William Graham, medical superintendent of Armagh Asylum, has been transferred by the Lord-Lieutenant to the Belfast District Lunatic Asylum, as successor to Dr. Merrick (resigned). Mr. George Lawless, of the Sligo Asylum, has been appointed to Armagh.

Kilkeel Dispensary.

Dr. Floyd was, on Aug. 24th, unanimously elected medical officer of Kilkeel Dispensary, No. 1 district, in place of Mr. Gordon, resigned.

Belfast Royal Hospital.

At the quarterly meeting, held on Aug. 23rd, it was reported that during the past three months there had been 539 intern and 6690 extern patients. At the close of the previous quarter the debt against the hospital was £2624 13*s.* 9*d.* Since then the receipts have been £1704 19*s.* 11*d.*, and the expenditure £2298 15*s.*, which brings the indebtedness to a sum of £3218 8*s.* 10*d.* at the end of July. This large sum owing by the hospital is to be accounted for to a considerable extent in an expenditure on necessary alterations in the house, and a sum of £2500 was voted to meet this indebtedness, which, when realised, will bring the actual debt down to £718 8*s.* 10*d.* Professor Cuming, M D. R.U.I., was re-elected staff-physician.

Untrained Nurses in Union Hospitals.

Pauper nursing in union hospitals has recently been the subject of much comment, and at the last meeting of the Kilrush guardians the medical officer, Dr. Foley, strongly urged the appointment of properly trained nurses. In the course of the discussion which ensued Dr. Foley gave the

following forcible description of the evils likely to result from entrusting the care of the poor patients to unpaid pauper attendants: "The pauper helpers receive more kicks than halfpence, and any work they do has to be squeezed out of them. It is not human nature to expect under the circumstances that they will show feeling and consideration to the inmates. Besides, their misfortunes sour their dispositions. Then they levy blackmail, and the patient who does not give a few pence is certain to be neglected." The guardians were evidently impressed by their medical officer's representations, and decided on holding a special meeting for the purpose of considering the question in all its bearings.

Vaccination in the Kenmare Union.

At the last meeting of the Kenmare board of guardians Dr. Browne, Local Government Board inspector, complained of the very backward state of vaccination in the union, and he said that he had learned from the dispensary medical officers that this was due to the fact that the guardians declined to enforce the law to compel parents to comply with the provisions of the Compulsory Vaccination Act. In reply one of the guardians explained that the great majority of the board objected to the system of vaccination from arm to arm, but that they would be prepared to carry out the law if lymph taken directly from the calf were used. A discussion ensued, and Dr. Browne announced that calf lymph could be procured by the union medical officers whenever the parents of children so desired.

Aug. 25th.

PARIS

(FROM OUR OWN CORRESPONDENT.)

Anti-choleraic Serum.

M. GAUTHIER laid before the Academy of Medicine on behalf of Dr. Ferran, of Barcelona, a claim of priority with respect to the treatment of cholera by anti-choleraic inoculations—a treatment the good effects of which the medical faculty in Spain as well as the public experienced in 1889. MM. Brouardel and Bertrand observed that the methods of the Spanish medical man, which date from 1885, the date when a commission of French medical men visited him for the purpose of investigation, did not at that time by any means give the beneficial results which their author claims for them to-day. On the other side, Dr. Ferran refused in 1885 to give up the formula of the composition of his vaccine, and has continued to persist in this refusal. Under these conditions the Academy has declared that it can neither give any decision as to the curative virtues of a preparation of which it knows nothing, nor give any support to Dr. Ferran in his claim for priority.

Isometropic Lenses of Baryta Glass.

For some time past so-called isometropic lenses made of baryta glass for spectacles have been used in Paris, which are said to be better for the sight because their curvature is less than that of ordinary lenses of the same focus. MM. Druault and Tscherning have examined these lenses in the ophthalmological laboratory of the Sorbonne, and have decided that they are very inferior to lenses made of ordinary glass. Their index of refraction is higher—namely, 1·576 instead of 1·534—and the difference of curvature is about 8 per cent., which is of no practical advantage. The baryta lenses are no harder than those of ordinary glass; they are slightly more transparent, but they have no other advantages.

Floating Hospitals.

Dr. Burot, Professor at the Naval School of Medicine, has just published the results of an inquiry into the working of hospital ships. During the late Madagascar expedition an interesting trial of hospital ships was made, the results of which merit every recognition. These results were very good, says Dr. Burot, and hospital ships are undoubtedly destined to render very valuable services in colonial expeditions. The *Shamrock* was the name of the ship which was employed on this service in 1895, and, according to Dr. Burot, all the sick soldiers were most anxious to be sent on board, and the greater part of them considered themselves quite safe as soon as they saw their names on the list for removal. There were only sixty deaths out of a total of two thousand sick. Counting the period of service of this ship at six months, this number works out at ten deaths per month, a mortality of 3 per cent., and one very much lower than that which existed during the same time in the hospitals in Madagascar. It is also a great deal lower than that of the hospitals either at Toulon or Saint Mandrier.

French Scientific Congresses.

The Congress of the French Association for the Advancement of Science has just taken place at St. Etienne. The question of actinomycosis brought out some very remarkable researches, especially those of MM. Poncet and Bérard.—A meeting of French alienists and neurologists has been held at Toulouse to consider the question of general paralysis and the organisation of the medical service of lunatic asylums.

Drinking-water in Paris.

Every speaker, whether in the Chamber or in the Senate, during the recent discussion declaring the intended works for utilising the Loing and the Lunain as a source of water-supply to be of public importance, has called the attention of the Prefect of the Seine to the insufficiency of the supply of drinking-water to Paris. This supply, which sometimes rises to 240,000 cubic metres for a population of 2,500,000 within the walls, fell to 197,000 cubic metres during the drought in 1895, so that it was necessary to supply certain quarters with water from the Seine, a most unsatisfactory proceeding. The Prefect of the Seine, M. de Selves, has therefore determined to study the methods of meeting the present evils, and with the assistance of all the leading exponents of science has started a commission to examine the various questions which arise as to the supply of Paris and its suburbs with a good drinking-water.

Aug. 24th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The New Tuberculin.

THE recent numbers of the *Deutsche Medicinische Wochenschrift* contain further instalments of the articles on the new tuberculin, some account of which has already been given in THE LANCET.[1] In the children's department of the Charité Hospital, Berlin, the remedy was tried in five cases, reported by Dr. Slawyk, assistant physician to that hospital. One child was given twenty-three injections, one was given twenty-one, and three children were given two. The smallest quantity injected was $\frac{1}{1000}$ milligramme of tuberculin, and the largest was six milligrammes. The injections were performed strictly in accordance with Professor Koch's directions. One child, a boy, aged eight years and nine months, suffered from marked scrofulosis, the symptoms being swelling of the cervical and submaxillary glands, cicatrices on both sides of the neck, blepharitis, swelling of the abdomen, chronic catarrh of the right lung, and enlargement of the liver and spleen; there was, however, no fever. The injections, although they did not at first exceed the small dose mentioned above ($\frac{1}{1000}$ milligramme), were, as a rule, followed by severe reactions—rise of temperature to 39 6° C. (103·3° F.), profuse perspiration, collapse, and hyperæmia at the place of the injection. It was also noticed that the sites of former injections became swollen when a new injection was made. The reaction, as a rule, began on the day of the injection; it often continued for several days, and was not liable to be attended by troublesome symptoms, notwithstanding the high temperatures. An alarming collapse, however, occurred in one case, the last injection (of six milligrammes of tuberculin) having been given twenty-two hours previously; the child became unconscious, the colour of his face was livid, the respiration stertorous, and the pulse weak. In the evening, about thirty hours after the injection, the collapse had reached its maximum, the respirations being 96 per minute and the pulse 186. During the night the child's state improved and about noon next day the danger was over. The injections were of course no longer continued with this patient. This untoward occurrence could not be attributed to the manner in which the operation was performed; probably the dose was too large for a child of that age. Another child, aged eight years, who suffered from pulmonary tuberculosis, together with symptoms of scrofulosis, had a more favourable experience than the child just mentioned; febrile reaction only happened after the last injections and in

[1] THE LANCET, July 17th, 1897, p. 171.

a slighter degree. With regard to the curative influence of the injections the report states that in the last case the objective symptoms in the lungs had diminished; in the first case the swelling of the glands also decreased during the treatment.—Dr. Wörner, physician to the hospital of Schwäbisch-Gmünd (Würtemberg), has used the tuberculin on eight patients, four of whom suffered from lupus, one from scrofulosis, and three from pulmonary tuberculosis. He recommends that the dose of the tuberculin should be increased very slowly—about 0·002 or 0·005 milligramme every second day. In this way febrile reaction may be avoided. In his experience unpleasant symptoms occurred in only one case and were apparently due to the tuberculin being of too high activity. The bottle was sent out by the Hoechst factory on the same date as that which had caused the severe symptoms in the case under the care of Dr. Bussenius in the Charité Hospital of Berlin.[2] Apparently the degree of virulence of the individual samples is apt to vary a good deal. Of the cases of lupus one patient who had for a long time suffered from the disease is nearly cured; two who had been operated on some time before the injections have had no relapse, and the patient suffering from scrofulosis is nearly cured. The effects on pulmonary tuberculosis have not hitherto been obvious enough to be recorded; there is, however, no indication of the treatment disagreeing with the patients.—A very interesting case of tuberculosis of the genital organs is described by Dr. Seeligmann, of Hamburg. A woman, twenty-eight years of age, suffering from lupus of the nose, complained also of menstrual troubles, and double pyosalpinx was found together with ulcerations in the vagina. The vaginal secretion contained tubercle bacilli. After forty injections there was a great change for the better in the patient's condition; menstruation was regular, the lupus of the nose was healed, the enlargement due to the pyosalpinx had disappeared, and tubercle bacilli were no longer discovered in the vagina.

Aug. 8th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Health of the Pope.

THE "mythopœic spirit," so familiar to the student of the past, is not less *en évidence* in the present; witness the inventions and fabrications that figure as "news" regarding the thoughts and actions, even the physical condition, of leaders in the contemporary world. Probably no personage gives such occasion for its exercise as the Supreme-Pontiff, whose "health" inspires so much solicitude in continental journals that hardly a fortnight passes without their commenting on it. I read, for instance, in an influential organ of the Alta Italia that "on the evening of the 16th inst. the Holy Father had two fainting fits (*svenimenti*), which recurred with equal gravity on the morning of the 17th. Professor Ceccarelli never leaves the Vatican so as always to be in attendance on Leo XIII. There is much anxiety in Rome," adds the chronicler who telegraphs the "news" from that city, "on account of this intelligence." Having read an obituary notice of the self-same distinguished Professor Ceccarelli in THE LANCET some five years ago[3] my scepticism as to the authenticity of the "intelligence" was rather more accentuated than usual, so I thought I would inquire at the only quarter whence information as to His Holiness can be obtained at first hand. I received for answer, "Il Papa sta benissimo" (The Pope is very well indeed); followed by the request, "Smentite la voce che il Papa fosse ammalato, tanto che il medico del Pontefice ricevette dispacci dalla Francia e dalla Germania che chiedevano notizie" (Contradict the rumour that the Pope was so ill that the pontifical physician received telegrams from France and Germany asking for particulars). That "counter" to which so many untruths are "nailed" would need to be of illimitable expansion!

Honours to Professor Sanarelli.

Siena is naturally proud of the alumnus whose discovery of the microbe of yellow fever has put the study of that tropical scourge on so advantageous a footing for its prophylaxis and clinical treatment, and the ex-rector of her school, Professor Domenico Barduzzi, still one of the most respected of her medical staff, in whose clinique young Sanarelli was trained, has expressed the mind of his colleagues in the following inscription, on the lines of which another will be inscribed on a memorial tablet to be unveiled in Sanarelli's honour on the university walls:—

GIUSEPPE SANARELLI—discepolo valoroso, maestro preclaro—nell' Ateneo Senese—giovane di anni, maturo di studi severi—fondatore dell' Istituto di igiene sperimentale—in Montevideo—svelando sulle rive del Plata—fra disagi, ansie, pericoli—il germe insidioso violento della febbre gialla—apriva nuova sicura mirabile via—contro tanto flagello.—All' amico, al collega carissimo—Domenico Barduzzi—manda plaudente fervidi auguri—di altre conquiste per la vita umana, per la scienza—di nuovi imperituri trionfi per l'Italia.

Siena, luglio MDCCCXCVII.

(To Giuseppe Sanarelli, a pupil of power, a teacher of distinction in the Sienese University; young in years, mature in severe study; founder of the Institute of Experimental Hygiene in Montevideo; disclosing, on the banks of the Plata, amid difficulties, anxieties, and dangers, the insidious yet violent germ of yellow fever, and opening up a new way, as secure as it is wonderful, to combat so formidable a scourge—to the well-beloved friend and colleague, Domenico Barduzzi sends with applause his ardent auguries of yet other conquests for human life and science and of fresh, immortal triumphs for Italy. Siena, July, MDCCCXCVII.)

A "Serum Anti bubonicum."

The event of the day in professional circles is the return of the Florentine bacteriologists from Bombay, whither the Di Rudini Ministry sent them to try to discover a prophylactic serum against the "pestis bubonica." These gentlemen, all from Florence—Professor Lustig, Dr. Malenchini, and Dr. Galeotti—received from the Bombay Government every encouragement and every facility in their researches; and their findings and conclusions, embodied in a report shortly to be made public, are stated to be eminently satisfactory. The Lustig serum, as it is called, differs from that of Yersin in being not curative but preventive; it belongs not to clinical but to State medicine. In its preparation, moreover, it offers much fewer difficulties than Yersin's. It is absolutely free from bacteria, it is dry, and, what is of capital importance, its effects on man and beast are quite harmless. Inoculated under the skin in small doses dissolved in water alkalinised and sterilised, it produces only a slight local œdema, which disappears in twenty-four hours. Tested repeatedly on rats, guinea-pigs, horses, and apes, the serum (particularly in the case of horses) had, in Professor Lustig's language, "risultati rapidi e soddisfacenti" (results speedy and satisfactory). Nor did the experiments stop with the lower animals. Professor Lustig, Dr. Malenchini, and Dr. Galeotti made trial of the serum on their own persons, and with gratifying effect. Further investigations confirmed the value of the "vaccino preventivo," as the report designates it; so that, unless three of Italy's most accomplished bacteriologists have been misled by some unforeseen source of error or some undetected fallacy they may be congratulated on having added a defensive weapon to State medicine in a quarter where it has long been desiderated.

Cholera Shadows.

On board the same peninsular liner, the *Britannia*, that landed Professor Lustig and his colleagues at Brindisi occurred two cases of cholera which caused some detention in that port before "*libera pratica*" (free course) was obtained. The disease declared itself in the Red Sea, and the patients were made to disembark at Suez, together with those in attendance, and were all of them placed under surveillance at the International Sanitary Station at the Wells of Moses. The steamship was thereafter allowed to traverse the Suez Canal in quarantine. The brevity of the interval between the disembarkation of the cholera patients and the arrival at Brindisi is held to justify the Italian Government in forbidding at the latter port the landing of the passengers and goods till the certificate of "*libera pratica*" could be granted.

Aug. 23rd.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The late Professor Joseph Kovács.

BUDAPEST University has received a heavy blow by the death of Professor Kovács, who succumbed to diabetes on

[2] THE LANCET, July 17th, 1897, p. 172.
[3] THE LANCET, Feb. 25th, 1893.

Aug. 6th, in his sixty-fifth year. When he was only sixteen years of age Kossuth roused the Hungarians against their Austrian rulers, whereupon he left college and served in the army which fought for the liberty of the country. After the revolution he continued his studies in Budapest and Vienna, and having received the degree of M.D. he soon became the assistant of Dr. Balassa, then Professor of Surgery in the Budapest Medical Faculty. At the age of thirty years he was appointed Lecturer on Surgery. During the Austro-Prussian war in 1866 he was entrusted with the surgical treatment of the wounded who had been removed to Budapest, and he executed this difficult task with great credit to himself and satisfaction to the profession. In 1868 he was appointed to the ordinary Professorship of Surgery, which he held until his death. He was also adviser to the Minister of Public Instruction. The name of Professor Kovács was little known in the medical world outside Austria-Hungary, but those who had the good fortune to witness his extraordinary skill in performing operations or to listen to his teaching at the bedside were all aware that he was not only an accomplished surgeon but a keen observer and a clear-headed man, possessing a sound and well-balanced judgment. He had the great merit of having trained in this country a number of surgeons who now occupy responsible posts and are celebrated for the ability which characterises their work. The memory of Professor Kovács will long be cherished, both by his pupils and by all who have known him.

Aug. 16th.

Obituary.

WILLIAM JOHN PILCHER, F.R.C.S. ENG., L.A.H. DUB., J.P.

GENERAL and sincere regret has been caused in South Lincolnshire by the announcement of the death of Mr. Pilcher, one of the best-known residents in Boston. His last illness was of about a fortnight's duration, and he died at his residence in the High-street on Aug 16th. Mr. Pilcher was born in Antigua in 1837. He studied medicine in Dublin University and in the schools attached to the Royal College of Surgeons in Ireland, becoming qualified as L.A.H. in 1858, L.M. (Rotunda Hospital) in 1859, and M.R.C.S. Eng. in 1860. His first professional engagement was as surgeon on board a Cunard mail steamer. In 1863 he settled in Boston, where he acquired an extensive practice and took an active part in the social and public life of the town. Mr. Pilcher was admitted to the Fellowship of the Royal College of Surgeons of England in 1869. His professional attainments were of a high order and the soundness of his judgment was generally recognised. He was one of the founders of the Boston Hospital, which dates from 1871, and has grown to its present size from a very small beginning, the patients having been at first accommodated in two cottages in Irby-street; its prosperity caused him the greatest satisfaction, and at the time of his death he was the oldest member of its medical staff. He was also a medical officer of the Boston Provident Dispensary, and had been President of the Midland Branch of the British Medical Association. He was made a Justice of the Peace for Boston in 1873; under the last Liberal Government he was also appointed a Justice of the Peace for the county, but he did not proceed to full qualification for this latter office, and never took his seat. Owing to the esteem in which he was held by his fellow townsmen he was chosen to fill various positions of local importance, being chairman of the Steam Laundry Company, deputy chairman of the Deep Sea Fishing and Ice Company, a charity trustee for Boston, and a trustee of the Parry Scholarship and Gold Medal. He also took a prominent part in connexion with the organisation of the University Extension lectures and the Gilchrist Trust lectures in Boston during 1895 and 1896. In November, 1895, he was elected an alderman by the town council. The funeral took place in Boston Cemetery on Aug. 18th in presence of a very large assemblage and amid general tokens of public mourning.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS.

MOSCOW, AUG. 19TH—26TH.

THE Twelfth International Medical Congress, held under the "high protection" of His Imperial Majesty the Emperor Nicholas II. and the "august patronage" of His Imperial Highness the Grand Duke Sergé, was formally opened by the Grand Duke at Moscow on Thursday, Aug. 19th, 1897. We shall be pardoned by our readers if we explain that in Russia there is official usage of what is called "old style" in the matter of dates; therefore in Moscow the Congress is held to have been opened on Aug. 7th, the "old style" being twelve days behind the rest of Europe.

Moscow, the wonderful many-coloured capital of ancient Muscovy, was looking its best on the opening day, and its best almost defies description. The painted towers, the gilded domes, the quaint spires, the old cathedrals, the new public buildings, the palaces, the shrines, and the hovels, each have their individuality and combine to make a whole the general effect of which cannot conceivably be summed up in a phrase or two. Brilliant colour seen against sober neutrality, civilisation, if not in all its most convenient forms, certainly in many of its hyperæsthetic developments, nodding to barbaric simplicity, palaces of the fourteenth century contiguous to seminaries of the nineteenth, the East arm-in-arm with the West,—these things make up a medley which can be imagined but hardly described.

The city is very full, but the English-speaking visitors are in a minority. There is no doubt that the lack of early organisation on the part of the Executive Committee of the Congress led to the abstention of many visitors, and particularly of many who had to come from a very long distance. Some who had paid their money and had been enrolled as members did not care to venture so far East without receiving any definite response to their requests for information as to lodgings or hotel accommodation. Others did not obtain acknowledgment of their cheques and their railway passes sufficiently early to enable them to arrange to make Moscow the seat of their usual summer holiday. "We who are in Moscow, however," writes one of our Special Correspondents, "can testify to the cordiality of our reception, but so full is the city that we are selfish enough not to be sorry that England is so badly represented."

The Germans have turned up in enormous numbers, and, as has been observed at these Congresses before, they all seem to know each other. The large hotel, the Slaviansky Bazar, and the enormous restaurant contiguous to it, are both the constant scene of big reunions of bearded savants, who all greet each other with an effusion that would go far to show that professional jealousy has not any abiding-place in the German empire. To other members of Congress there is present occasionally a certain anxiety about their ignorance of Russian customs and language, but into the German breast such apprehensions do not seem to enter. With one accord they seem to have decided that the Congress offers an opportunity to them for a picnic and a renewal of their student friendships.

We allude to Moscow advisedly as the capital of Russia, for this it is although the official Government has its seat in St. Petersburg. But round Moscow the real Russian tradition clings. Here we have the holiest fanes, and

here, in the famous Kremlin, are the ancient documents which tell the story of the evolution of the empire. Geographically, also, Moscow is the centre of the present Russian empire, and in whichever direction, if any, the territorial expansion occurs Moscow will be the focus of all business organisation, being in touch alike with Siberia and Tartary, with Finland and the Crimea. But whether Moscow is an ideal place for a medical congress is another question. It is a difficult city to reach, and when reached it has but indifferent accommodation to offer to the visitor. There are few hotels, and only one of any size, while the use of *Meblivoranni Komnatie*, or large blocks of furnished apartments under the supervision of a landlady, is not one into which the ordinary traveller quickly falls. Let us hasten to add that every attempt has been made on the part of the organisers of the Congress to make the visitors comfortable and to avoid the annoyance and inconveniences of arrival in a strange city; but Moscow does not lend itself to the sudden addition of 7000 persons belonging to what in Russia are the upper classes within a few hours. Consequently, we know that many visitors to the Congress have been very uncomfortable, while the impossibility of explaining their wants to a population which speaks for all practical purposes nothing but Russian has added to their troubles.

The Congress informally opened on Aug. 18th, when all members were invited to attend a general meeting in the Palais d'Exercice, and then meet the committee of the section under which they were enrolled and obtain any information or tickets which they required. This palace, which is popularly known as the *Manége*, is well-fitted for the purpose to which it has been put, as the headquarters of business arrangement, for it is an enormous building in the centre of the city, easily accessible, near the University, and not a great distance from the *cliniques*. But the general trouble and turmoil of travel upset the fore-planned arrangements. Everyone was hot, dusty, and dirty, and in a short time the true uses of the preliminary meeting were lost sight of, the various alcoves which were designed to be the headquarters of different sections were completely deserted, while the centre of the building was used as a smoking promenade by everyone who was not struggling around the *poste-restante*, the restaurant, and the lavatory. The first two, it should be said, were admirably worked, but of the shameful inadequacy of the last a plain word must be spoken. One urinal and one water-closet were placed at the disposal of the whole Congress, and both were in the same little wooden hut, divided from each other by no partition. Moscow is according to European ideas very inadequately supplied with latrines, while the unblushing publicity of the East concerning the performance of all the offices of nature to a great extent prevails; but those responsible for the arrangements of the public meeting in the *Manége* ought to have remembered that the meeting was an international one, and not an oriental one.

The arrangements for the reception of ladies were much better, but there were, of course, by no means so many ladies to be provided for. They were well looked after by a competent local committee, who had taken all pains to make orderly provision for probable wants. From this little fact one lesson may be deduced, and that is that the numbers who attend these congresses are now so large that proper organisation for comfort is impossible. Thousands of persons surging into a foreign town cannot be made to feel at home, though hundreds possibly can. If the congresses could be confined to delegates the standard of comfort would be much higher, and the scientific character of the meetings would lose nothing by such a limitation. But as these congresses are at present constituted an enormous number of people have to be provided for, and temptation must be placed before them to pay their guinea and attend, for without a good sum of money in hand the meetings must result in a pecuniary loss, while there is no very clear reason why any State, or any individual, should meet that loss. But speculation on this point would lead us to speculation upon the uses of scientific congresses, a large subject not now under consideration.

On Thursday evening, Aug. 19th, there was a well-attended soirée in the Galleries of Commerce, all members of the Congress being invited to be present. The galleries are enormous new buildings constructed over vast arcades, with shops on either side, and form a prominent feature of modern Moscow, all the more prominent because their ornate, white façades in modern Italian style abut on the old red walls of the Kremlin. The programme of the evening included performances by Russian, Cossack, and Tzigane choirs, while refreshments were provided in the different galleries with truly Russian magnificence.

A generous offer has been made by a number of merchant princes in Moscow, who propose to endow an infirmary for epileptics and the weak-minded of both sexes to commemorate the Congress.

THE FIRST GENERAL MEETING.

Those who were fortunate enough to be present at the opening ceremony of the Congress witnessed an extremely brilliant sight. The organising committee, in selecting a suitable place for the three general assemblies, have been placed in a position of no little difficulty. To find a building capable of accommodating even a moiety of the 7000 members of the Congress, many of whom are accompanied by ladies, was an obvious impossibility. In ultimately selecting the Grand Theatre (*Bolshvi Tëatr*) the problem appears to have been solved in the best possible manner. This fine theatre, the largest in Europe, stands in the centre of a plain, just outside the *Kitai Gorod*, or "Chinese Town," a characteristic part of the city of Moscow, surrounded by walls which almost rival those of the Kremlin itself. The interior of the theatre was entirely renovated last year for the occasion of the gala spectacle at the time of the Coronation. On this occasion every seat appeared to be occupied some time before the opening of the Congress, which was fixed for 1 o'clock. As seen from the stage the sight was certainly a striking one. The prevailing dress appeared to be the ordinary evening dress of civilisation, but in all parts of the house this was relieved by more than a sprinkling of uniforms and decorations, and orders of all nationalities were worn by a goodly number of those present. The stage was occupied by the official representatives and delegates of the various nationalities, and here, as was to be expected, there was a brilliant array of official uniforms and decorations. Throughout the house, too, the summer toilettes of the ladies present, of whom there were many, added conspicuous touches of colour. Her Imperial Highness the Grand Duchess Elizabeth, the wife of the Grand Duke Sergé, occupied the stage box on the left side. Punctually at 1 o'clock the audience rose as the august patron of the Congress, the Grand Duke Sergé Alexandrovitch, took his seat at the centre of the table, which occupied the whole length of the front of the stage. To his Highness's right was the Minister of Public Instruction, his Excellency Count Delianof, and to his left Professor Sklifosovski, the President of the Organising Committee of the Congress. At the table were seated also the Mayors of Moscow and St. Petersburg and many of the representatives of foreign countries. The remainder of the stage was completely filled by foreign delegates and members of the national committees. The back of the stage was occupied by a full-length portrait of the Emperor, surrounded by numbers of tropical plants and trophies of flags of all nations.

The Grand Duke having declared the Congress officially open, Count Delianof rose and delivered a short address of welcome in the Latin tongue. He spoke of the lofty aims which had brought the members together and wished success

to their joint labours. Professor Sklifosovski, as president of the Organising Committee, who spoke in French, then gave a brief address. He welcomed the members of the Congress in the name of the oldest of the Russian universities. Russia, he continued, was no longer separated, as in the past, by a Chinese Wall from the rest of Europe. It had been the lot of Russia to protect the West from those fatal Asiatic influences which had for so long prevented her own development. He then passed on to discuss the question of languages. The multiplicity of languages had, he said, in the past been one of the great bars to international intercourse, and he proposed that an attempt should be made at the present Congress to come to some decision on the question of what language or languages should be employed at this and succeeding international gatherings. He suggested that each nation should elect two representatives, who should collectively form a committee to discuss this subject.

Professor Roth, the general secretary, then gave an account of the preliminary labours of the organising and executive committees. The present Congress was larger than any of its predecessors, the number of members exceeding 7300. Prince Galitzin, the Mayor of Moscow, then welcomed the members of the Congress in the name of the city of Moscow, and added that to commemorate the event the municipality had decided to offer a triennial prize for the best work on some selected medical subject, under conditions already described in THE LANCET. The speeches of the representatives of foreign countries then followed. The majority spoke in French, but the German and Austrian representatives spoke in German, the English in our own tongue, and the Czech and Bulgarian in Russian. The first and the most eloquent address was that of Professor von Koller, surgeon-general of the Prussian army, whose speech was received with loud applause. Space will scarcely permit of more than the mention of the many countries whose delegates addressed the house at more or less length. The representatives spoke in the following order: Germany, Austria, Czech, Hungary, England, Belgium, Denmark, France, Mexico, Italy, Japan, the United States, Spain, Norway, the Netherlands, Roumania, Portugal, Sweden, Turkey, and Switzerland. Professor Tarnovski, of the Russian Medical Council, and M. Dekhteref, representing the city of St. Petersburg, then spoke; the latter, in the course of his speech, cordially inviting the members of the Congress to visit St. Petersburg after their labours in Moscow were at an end.

Professor Roth then read the names of the representatives of foreign countries. The names, particularly the more familiar ones, were received with loud applause, which in many instances was not silenced until the owner of the name had risen and bowed his acknowledgments. Germany is represented by Professor Virchow, Professor Leyden, Professor Ziemssen, and Professor Waldeyer; Austria by Professor Gussenbauer, Professor Hlava, Professor Pertik, and Professor Riedeger; Belgium by Professor Crocq; Great Britain by Sir William MacCormac, Sir William Stokes, and Professor Simpson, of Edinburgh; the United States by Dr. Sayer, Dr. Senn, and Dr. Billings; Spain by Dr. Robert, of Barcelona; France by Professor Lannelongue, Professor Le Dentu, Professor Grassé, and Professor Pinard; Italy by Professor Dantona, Professor Bottini, and Professor Lombroso; and Switzerland by Professor Kocher and Dr. Roux.

After the addresses of the delegates, many of whom of necessity spoke with great brevity, there was an interval of five minutes. On the house re-assembling Professor Virchow at once ascended the rostrum on the left side of the stage to read his address on "The Continuity of Life as the Basis of Biological Science." His appearance was the signal for a loud outburst of applause, and it was some moments before the veteran professor could begin his speech. The subject of his address had been changed almost at the last moment, his original communication on "The Rôle of the Vessels in Inflammation" being reserved for one of the sectional meetings. The beginning of the address, which was delivered in German, was devoted to an interesting *résumé* of the various views of the nature of life which had been held at different times and by different observers, and of the successive discoveries which had widened man's knowledge of the nature and mechanism of vital action. Paracelsus had held that the life of a living organism was twofold; there was the life of the separate parts, the "*vita propria*"; and the life of the whole, or "*vita communis*." The speaker then passed in brief review the great discovery of Harvey of the circulation of the blood, the labours of Malpighi, the discoveries of Pasteur, and the great philosophical work of Darwin. All these had brought us nearer to the secret of what life is and what is its source, but it still remains a secret. Only two or three years remain to the opening of another century, and the orator concluded his address by expressing the hope that before the close of the twentieth century the problem of life might be solved.

The second address was that of Professor Lannelongue, of Paris, who received a scarcely less enthusiastic welcome from the audience than the preceding orator. The subject of his address was "The Surgical Treatment of Tuberculosis." Professor Lannelongue, who spoke in French, said that in former times local affections of all sorts, now known to be tuberculous in character, had been called by a number of different names. It was only by the recognition of the so-called tuberculous nodule that the common origin and character of all these different affections had been established. Later still the discovery by Koch of the tubercle bacillus had proved beyond a doubt, not only their identity, but also their infectious character. What was the duty of the surgeon in view of these conclusions? Obviously he must endeavour to remove the local centres of infection, which threatened the whole organism—to remove them as early as possible and as completely as circumstances would allow. The objections which had been raised to this method of reasoning do not bear criticism. It had been said that the tubercle bacilli are accompanied by other micro-organisms, the action of which will continue although the centres of tuberculous infection are removed. But the presence of other organisms is in the majority of cases the result of the open condition of the specific tuberculous centres, allowing access to the body of extraneous micro-organisms which would not otherwise obtain access to the tissues. In such cases there is doubtless a mixed infection. The method of surgical interference was in many such cases not available, particularly if it was uncertain where the original source of infection was situated. In these cases conservative methods must be followed; immobilising, extension, rest, and bloodless methods generally gave better results than operation. Sometimes good results could be obtained by the injection of microbicidal fluids into the tissues at the centre of infection. But the number of such cases was limited. In a majority of instances the watchword of the surgeon should be "*Agir tôt, agir vite*"—remove at the earliest opportunity the source of the infection—the tubercle bacillus.

Dr. Lauder Brunton, of London, who wore his Doctor's gown of scarlet cloth, then read an address on "The Relations between Physiology, Pharmacology, Pathology, and Practical Medicine," which will be found in another part of our present issue. Dr. Lauder Brunton spoke in French, and as the hour at which he rose was already a late one he greatly condensed his interesting address.

THE LATE MR. JOHN PHILLIPS, C.E.—Mr. John Phillips, who recently died at his residence, Disraeli-road, Putney, in his eighty-first year, had a considerable share in the introduction of the sewerage system which rescued London from the cesspool abominations and rendered it a healthy well-drained city. The evidence given by him before the Metropolitan Sanitary Commission in 1847 contains some woeful pictures of the filthy state of the basements in many localities due to overflowing of the cesspools. The egg-shaped sewer, now universally used, was invented by him—a question easily settled by reference to the Blue-books for 1847 (report of the Sanitary Commission)—and the first sewers of that section were laid down by him and the late Mr. John Roe, who was surveyor to the Holborn and Finsbury Commission. He was also the inventor of street gullies, and was among the first to make use of stoneware drain-pipes. During his active years Mr. Phillips held the appointment of chief surveyor to the Metropolitan Commissioners; he had, however, for many years lived in retirement, occupying himself with antiquarian studies relative largely to the past history of Putney and the connexion between it and the families of Oliver Cromwell and Thomas Cromwell, Earl of Essex. Papers on these subjects were published by him in the *Antiquarian* in 1880, and in the *Antiquarian Magazine* in 1882.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations, and having complied with the by-laws and regulations, have been admitted Members of the College, viz :—

Abbott, Horatio White, L.R.C.P. Lond.
Ackland, Charles Herbert, L.R.C.P. Lond.
Adams, Arthur Reginald, L.R.C.P. Lond.
Alcock, George Herbert, L.R.C.P. Lond.
Aldridge, Arthur William, L.R.C.P. Lond.
Alford, Herbert Thomas Marmaduke, L.R.C.P. Lond.
Allan, Herbert William, L.R.C.P. Lond.
Allan, Humphrey, L.R.C.P. Lond.
Anthony, Frederic, L.R.C.P. Lond.
Aslett, William Stacey, L.R.C.P. Lond.
Atkinson, George Louis, L.R.C.P. Lond.
Bahadurji, Jamshed Nassarvanji, L.R.C.P. Lond.
Baker, Alfred Eaton, L.R.C.P. Lond.
Barrett, Frederic Walter, L.R.C.P. Lond.
Barton, Eustace Robert, L.R.C.P. Lond.
Barton, John, L.R.C.P. Lond.
Batchelor, Ferdinand Stanley, L.R.C.P. Lond.
Battye, Walter Rothney, L.R.C.P. Lond.
Baylis, Henry, L.R.C.P. Lond.
Beckton, William, L.R.C.P. Lond.
Benham, Charles Henry, L.R.C.P. Lond.
Bennett, Henry Charles Plant, L.R.C.P. Lond.
Bennett, James, L.R.C.P. Lond.
Bergin, William Marmaduke, L.R.C.P. Lond.
Betteridge, Thomas, L.R.C.P. Lond.
Bonnin, James Atkinson, L.R.C.P. Lond.
Brett, Henry Clarence Marshall, L.R.C.P. Lond.
Brewer, Dunstan, L.R.C.P. Lond.
Brown, Robert Pollock, L.R.C.P. Lond.
Cade, Harry Mills, L.R.C.P. Lond.
Cardin, Herbert, L.R.C.P. Lond.
Chapman, Charles Leopold Granville, L.R.C.P. Lond.
Chapple, William Allan, M.B., Ch.B. New Zealand.
Charles, John Roger, L.R.C.P. Lond.
Cheesman, Herbert Hilton, L.R.C.P. Lond.
Churchill, Joseph Henry, L.R.C.P. Lond.
Cleveland, Arthur John, L.R.C.P. Lond.
Clifford, Harold, L.R.C.P. Lond.
Claud, Frank Henry Loveless, L.R.C.P. Lond.
Cobb, Ernest Herbert, L.R.C.P. Lond.
Coleman, Edward Hayling, L.R.C.P. Lond.
Collier, Robert Stanley, L.R.C.P. Lond.
Cotterill, Albert Ernest, L.R.C.P. Lond.
Deakin, Frank Newstead, L.R.C.P. Lond.
Dent, Howard Henry Congreve, L.R.C.P. Lond.
Dixon, Henry Cuthbert, L.R.C.P. Lond.
Dobson, Joseph Faulkener, L.R.C.P. Lond.
Downes, Godkin, L.R.C.P. Lond.
Dudgeon, Herbert William, L.R.C.P. Lond.
Duncan, George Ernest, L.R.C.P. Lond.
Dykes, Campbell, L.R.C.P. Lond.
East, William Norwood, L.R.C.P. Lond.
Ferguson, William, Alexander, L.R.C.P. Lond.
Fergusson, James Herbert, L.R.C.P. Lond.
Fox, Edward Hamilton Bruce, L.R.C.P. Lond.
Gaskell, Leonard Sandgrove, L.R.C.P. Lond.
Gervis, Charles Berkeley, L.R.C.P. Lond.
Gibbons, Charles James Preston Telford, L.R.C.P. Lond.
Godwin, Herbert James, L.R.C.P. Lond.
Greaves, Henry, L.R.C.P. Lond.
Haines, Aubrey Wheeler, L.R.C.P. Lond.
Hardwicke, George, L.R.C.P. Lond.
Harvey, Frederic, L.R.C.P. Lond.
Hitchins, Frederick Charles, L.R.C.P. Lond.
Hodgson, Cortis Rawsthorne, L.R.C.P. Lond.
Holmes, John, L.R.C.P. Lond.
Hughes, Sidney, L.R.C.P. Lond.
Hull, Alfred John, L.R.C.P. Lond.
Jackson, Wilfred Anthony Legh, L.R.C.P. Lond.
Jago, Thomas Dinnen, L.R.C.P. Lond.
Jamieson, Harold Henry, L.R.C.P. Lond.
Jeaffreson, Alfred Ernest, L.R.C.P. Lond.
Jones, Arthur Reginald, L.R.C.P. Lond.
Jones, John Llewelyn, L.R.C.P. Lond.
Kay, Richard, L.R.C.P. Lond.
King, Nevill Pearce, L.R.C.P. Lond.
Kirk, John Lamplugh, L.R.C.P. Lond.
Knechtel, Robert, L.R.C.P. Lond.
Lamb, Archibald Walter, L.R.C.P. Lond.
Lankester, Cecil Pryor, L.R.C.P. Lond.
Latham, Denyer William Fellows, L.R.C.P. Lond.
Lewis, Colton Taylor, L.R.C.P. Lond.
Lloyd, Lewis Jones, L.R.C.P. Lond.
Long, John Reginald, L.R.C.P. Lond.
Lord, Cyril Courtenay, L.R.C.P. Lond.
Lucas, Joseph John Scammell, L.R.C.P. Lond.
McClure, James, L.R.C.P. Lond.
Macdonald, John Norman, L.R.C.P. Lond.
Mackie, Frederic Percival, L.R.C.P. Lond.
McNally, George Johnston, L.R.C.P. Lond.
Mainprise, Cecil Wilmot, L.R.C.P. Lond.
Mannington, Frank, L.R.C.P. Lond.
Marles-Thomas, Theodore, L.R.C.P. Lond.
Martin, John, L.R.C.P. Lond.
Martin, Thomas, L.R.C.P. Lond.
Maver, Patrick Alpine James, L.R.C.P. Lond.
Maxwell, James Burns, L.R.C.P. Lond.
Maxwell, Richard Drummond, L.R.C.P. Lond.
Mayau, Marmaduke Stephens, L.R.C.P. Lond.
Meacock, Henry Charles, L.R.C.P. Lond.
Meade, Frank Elliott, L.R.C.P. Lond.
Meade, Norman Gerald, L.R.C.P. Lond.
Morgan, Walter Harmon, L.R.C.P. Lond.
Morland, Egbert Coleby, L.R.C.P. Lond.
Musselwhite, William, L.R.C.P. Lond.
Myers, Charles Samuel, L.R.C.P. Lond.
Newland, Henry Simpson, L.R.C.P. Lond.
Ogilvie, James, L.R.C.P. Lond.
Paterson, Archibald Richard, L.R.C.P. Lond.
Payne, Alfred Ernest, L.R.C.P. Lond.
Price, David, L.R.C.P. Lond.
Ransome, Gilbert Holland, L.R.C.P. Lond.
Roberts, David Faulkes, L.S.A. Lond.
Riley, Arthur, L.R.C.P. Lond.
Ryland, Robert Felix, L.R.C.P. Lond.
Sanderson, Edgar Stanley, L.R.C.P. Lond.
Sangster, John Ikin, L.R.C.P. Lond.
Sansome, Thomas, L.R.C.P. Lond.
Scott, Henry Harold, L.R.C.P. Lond.
Smith, Hugh Victor, L.R.C.P. Lond.
Snowden, Arthur de Winton, L.R.C.P. Lond.
Stephen, Lionel Henry York, L.R.C.P. Lond.
Spencer, Thomas, L.R.C.P. Lond.
Storrs, William Townsend, L.R.C.P. Lond.
Tempest, James, L.R.C.P. Lond.
Tomlinson, John Henry, L.R.C.P. Lond.
Turner, Philip, L.R.C.P. Lond.
Turner, Sydney Duke, L.R.C.P. Lond.
Tuxford, Reginald, L.R.C.P. Lond.
Walker, Herbert John, L.R.C.P. Lond.
Wallis, James Garfit, L.R.C.P. Lond.
Watson, John Harry, L.R.C.P. Lond.
Watson, John William, L.R.C.P. Lond.
Way, Montague Harold, L.R.C.P. Lond.
Weld, Alfred Edmond, L.R.C.P. Lond.
Whincup, Frank, L.R.C.P. Lond.
Whipham, Thomas Rowland Charles, L.R.C.P. Lond.
Whitfield, Allan, L.R.C.P. Lond.
Wood, William Bird Herapath, L.R.C.P. Lond.
Woolley, Edward John, L.R.C.P. Lond.

FOREIGN UNIVERSITY INTELLIGENCE. — *Amiens* (*Medical School*): Dr. Bax has been appointed Professor of Clinical Medicine.—*Barcelona*: Dr. Eusebio Oliver y Aznar, Professor in the Granada Medical School, has been appointed to the Chair of General Pathology.—*Berlin*: Dr. P. Silex has been promoted to an Extraordinary Professorship of Ophthalmology.—*Berne*: Dr. Max Stoos has been appointed Extraordinary Professor of Children's Diseases. — *Bonn*: Dr. B. Schörndorff has been recognised as *privat-docent* in Physiology. — *Breslau*: Dr. Kader, Assistant to the Professor of Surgery, has been recognised as *privat-docent* in that subject; Dr. Kühnau has been recognised as *privat-docent* in Internal Medicine; Dr. Henle has been recognised as *privat-docent* in Surgery. — *Chicago* (*College of Physicians and Surgeons*): Dr. A. H. Burr has been appointed Assistant Professor of Medicine.—*Göttingen*: Professor Nicolaier has been appointed Principal Physician of the Medical Clinic.—*Freiburg* (*Baden*): Dr. Bulius has been promoted to an Extraordinary Professorship of Gynæcology.—*Königsberg*: Dr. Bumm, Professor in Basle, has been offered the Chair of Midwifery and Gynæcology in succession to Dr. Dohrn.—*Lemberg*: Dr. Gregor Ziembicki and Dr. Victor Wehr have qualified as *privat-docenten* in Surgery.—*Rome*: Dr. Luigi Tarulli has been recognised as *privat-docent* in Physiology, Dr. Fillipo Rho as *privat-docent* in Medical Pathology, Dr. Raffaele Bastianelli as *privat docent* in Surgery, and Dr. Domenico Lo Monaco as *privat-docent* in Materia Medica and Pharmacology.—*Strasburg*: Dr. Karl Spiro, of Berlin, has qualified as *privat-docent* in Physiological Chemistry.—*Tübingen*: Dr. Albert Doderlein, Professor of Medicine in Gröningen, has been appointed Professor of Midwifery in succession to the late Dr. von Saxinger. — *St. Petersburg* (*Military Medical Academy*): Dr. Georg Vlaieff and Dr. Nikolai Kulbin have been recognised as *privat-docenten* of Internal Medicine.—*Vienna*: Dr. R. Kretz has been recognised as *privat-docent* of Pathological Anatomy, and Dr. Lode as *privat-docent* in Hygiene.—*Würzburg*: Dr. Andreas Rosenberger has been appointed Extraordinary Professor of Forensic Medicine.

THE CHEMISTS' EXHIBITION.—This annual exhibition grows in importance and this year has arrived at the dignity of an international exhibition as certified under the provisions of the Board of Trade. Pharmacy affords an excellent opportunity for making a bright and attractive show and the preparation and compounding of drugs is a rapidly developing branch of home industries, and it is not surprising to learn that next year, consequent upon the excessive demands upon space, the exhibition will be held in the Agricultural Hall. Some may have been led to exclaim, "To what base uses, &c.," but the exhibition recently held in Covent Garden Theatre was well and tastefully arranged and the scene viewed from the upper tiers was quite Oriental while the perfumes in the air added reality to the picture. It is evident that the Chemists' Exhibition has become very popular all the leading chemists, druggists, and perfumers, now taking an active and interested part in it. We congratulate the organisers, the proprietors of the *British and Colonial Druggist*, on having initiated a successful movement

THE annual meeting of the Nottingham Medico-Chirurgical Society was held on July 21st, Dr. W. B. Ransom, president, being in the chair. The annual reports of the secretaries, treasurer, and librarian were severally read and adopted. The following were elected as officers for the ensuing year:—President: C. H. Cattle. Vice-Presidents: W. B. Ransom and E. Snell. Council: J. H. Cox, G. B Wray, A. E. Nuttall, F. Rothera, and C. Macmillan. Secretaries: W. E. Tresidder and E. C. Kingdon. Librarian: W. J. Stephens. Treasurer: T. Geraty. Library Committee: A. W. C. Peskitt, F. J. Lander, J. S. Bolton, and J. Mackie. Pathological Committee: Miss Gray, E. J. O'Mullane, and A. Waring. Finally, on the motion of Mr. Tresidder, seconded by Dr. Cattle, it was resolved that the best thanks of the society be accorded to the retiring president, Dr. W. B. Ransom.

FREEDOM OF THE CITY OF MANCHESTER.—At a special meeting of the City Council on the 18th inst. it was unanimously resolved to present the freedom of the city to Dr. A. W. Ward, the Principal of Owens College, who is shortly about to retire from that position, and also to Mr. Herbert Philips, a much respected member of a family honourably connected with Manchester for more than a century. The College will lose in Dr. Ward a man who has well represented the dignity of culture and done much to uphold and extend the influence of the College. Mr. Herbert Philips has for many years taken a prominent part in philanthropic work, and has particularly interested himself in schemes for the physical recreation of the people. He has long been a valued member and vice-president of the Sanitary Association, and is also vice-president of the Smoke Abatement League.

DONATIONS TO ABERDEEN HOSPITALS, &c.—The Thurburn Cooking Depôt, Aberdeen, having been discontinued, and the trust being wound up, the trustees have allocated the funds as follows:—Aberdeen Royal Infirmary, £1200; Aberdeen Hospital for Incurables, £1200; Aberdeen Hospital for Sick Children, £1000; Aberdeen Asylum for the Blind, Aberdeen Dispensary, and the Association for Improving the Condition of the Poor, £750 each; Aberdeen District Nursing Association, £500; Aberdeen Soup Kitchen and the Ophthalmic Institution and Hospital, £250 each; Aberdeen Free Breakfast Mission, Female School of Industry, and Seabank Home for Fallen Women, £150 each. Total, £7100; any available balance to go to the Royal Infirmary. The result of the Hospital Saturday Demonstration will be the distribution of £750 among the Aberdeen hospitals. The Special Jubilee Fund for the hospitals amounts to £5300.

THE UNITED KINGDOM POLICE SURGEONS' ASSOCIATION.—The annual meeting of this association was held at Exeter Hall on July 28th, when the report of the council was received and adopted and copies were ordered to be sent to all police surgeons whose addresses are known. A resolution congratulating the retiring President, Sir H. D. Littlejohn, on his being appointed Professor of Forensic Medicine in the University of Edinburgh was unanimously adopted, and Mr. E. K. Houchin, metropolitan police surgeon and deputy coroner for East London, was chosen as his successor. A form for taking notes of post-mortem examinations, which had been issued under the sanction of Dr. Danford Thomas, the coroner for Central Middlesex, was considered and adopted, and it was resolved that a copy should be sent to each member of the association. A letter was read from Dr. Craig, of Birmingham, urging that coroners should be communicated with, suggesting on the part of the association that police surgeons should be called in to make necropsies and give evidence in cases where no medical man had been in attendance during life, and it was resolved that this should be done.—The following officers and council were elected for 1897-98:—President: E. K. Houchin, L.R.C.P. Edin. Vice-Presidents: T. Holmes, F.R.C.S. Eng., T. Bond, F.R.C.S. Eng., Sir H. Littlejohn, M.D. Edin., and H. Barnes, M.D. Edin. Treasurer: H. Nelson Hardy, F.R.C.S. Edin. Hon. Secs.: F. W. Lowndes, M.R.C.S. Eng., and H. C. Hopkins, M.R.C.S. Eng. Council: J. R. Baumgartner, M.R.C.S. Eng., J. F. Craig, M.D. Aberd., C. Eastwick-Field, M.R.C.S. Eng., G. H. Heald, M.R.C.S. Eng., W. J. Heslop, F.R.C.S. Edin., D. McDonnell, M.D. Irel., H. Maybury, M.D. Irel., H. W. Roberts, M.R.C.S. Eng., W. Roocroft, M.R.C.S. Eng., C. Templeman, M.D. Edin., W. Washbourn, L.R.C.P. Lond., and S. Wyborn, M.R.C.S. Eng.

PRESENTATIONS TO MEDICAL MEN.—To mark their appreciation of the services rendered by Mr. J. Dickinson Leigh, M.B., C.M. Edin., &c., as honorary instructor to the St. John Ambulance Classes formed in connexion with the Lumpsey and Huntcliff mines, the members presented him with a case of silver-mounted dessert knives and forks at a meeting held at Brotton-in-Cleveland, Yorkshire, on Aug. 9th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Zd. Nieszkowsk, editor of *Medyzyna*, a Warsaw medical journal of considerable repute amongst Polish medical men.—Dr. Don Cesareo Magdalena, a Madrid bacteriologist.—Dr. Ask, Professor of Surgery in the University of Lund.—Dr. Finotti, *privat-docent* of Surgery in Gratz.—Dr. Sousa Martins, of Lisbon, a well-known authority on hygiene and the representative of Portugal at the Vienna Conference. It was due to his initiative that severe measures were undertaken in Portugal against the spread of cholera and yellow fever.

THE NEXT LORD MAYOR OF MANCHESTER.—In accordance with a requisition signed by every member of the council Mr. Alderman Gibson, chairman of the Gas Committee, has consented to become the next Lord Mayor of Manchester. When thirteen years of age he was apprenticed to Mr. Pittinger, a medical practitioner, of Sutton-on-Trent. This gentleman it seems had a druggist's shop in Newark, in which much of Mr. Gibson's time was spent. He did not proceed further in his medical career, but in course of time began on his own account as a druggist in Manchester. He subsequently established himself as a medicated lozenge manufacturer, and the business has become both extensive and very prosperous. As may be remembered, a recent deputation to him as chairman of the Gas Committee with respect to the use of water gas did not meet a very encouraging reception.

LAUNCESTON GENERAL HOSPITAL, TASMANIA.—The report of the General Hospital, Launceston, Tasmania, for the year 1896 shows that 70 patients were under treatment on Jan. 1st; 780 were admitted during the twelve months, 693 were discharged, 83 died, and 74 remained on Dec. 31st. The daily average number of in-patients was 76, and the average stay in hospital was between thirty-five and thirty-six days. There were also 1178 out-patients treated, among whom there were 8 deaths. The present building was erected as a hospital and has been established thirty-two years. It is a general hospital, with the exception that lying-in cases are not admitted. There are 122 beds. The town and district have a population of about 50,000. The cost of construction was defrayed by the Government, and the whole of the annual maintenance is contributed by the Government, except what is received from patients who pay fees. The gross expenditure for 1896 was £5762, and the patients' payments were £632. The resident medical staff consists of a surgeon-superintendent (Mr. F. J. Drake, M.A., M.B., B.S. Melb.), and a house-surgeon. Two students have attended the medical practice and two students the dental practice. There are four members of the honorary consulting staff and two dental surgeons. The course of instruction for nurses consists of lectures on General Anatomy and Physiology, on Minor Surgery, and on Nursing, the latter section comprising lectures on "Hospital Etiquette," and on the "Distinction between the Work of Doctor and Nurse." The hospital statistics are of the usual character. They include 29 cases of phthisis, 21 of general paralysis of the insane, 30 of pneumonia, 31 of cancer, and 65 of enteric fever, of which latter only one case was admitted from the end of June to the end of November.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ARKLE, G. M., L.S.A. Lond., has been appointed Medical Officer, West Derby Union; North part of No. 2 District.

BEADLES, H. S., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the Grimsby and District Hospital.

BENNETTS, A. J., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Assistant House Surgeon to the Royal Albert Hospital, Devonport.

BROWNING, B., L.R.C.P., Lond., M.R.C.S. Eng., D.P.H., has been re-appointed Medical Officer of Health to the Weymouth Urban District Council.

CARRUTHERS, E. J. W., M.D. Edin., has been appointed Medical Officer of the Congleton District of the Congleton Union.

CLAY, JOHN, M.B., B.S. Durh., has been appointed to the post of Surgical Registrar in the Royal Infirmary, Newcastle-on-Tyne.

DINGWALL, A, M.B., M.S. Univ. Aberd., has been appointed Medical Officer of the Pembridge District.

FERNIE, J. F., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the Staffordshire General Infirmary.

FRY, W. W. B., M.B., M.S. Edin., has been appointed Medical Officer of Health to the Builth Urban District Council.

GOWING, B., M.R.C.S. Eng., L.S.A. Lond., has been appointed Medical Officer, No. 5 District, Wortley Union.

GROSS, C. F., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer of Health to the East Ashford Union, No. 7 District.

KENDALL, H. W. M., M.R.C.S. Eng., L.S.A. Lond., has been appointed House Surgeon to the Central London Ophthalmic Hospital.

KINGDON, WILFRED R., M.D. Durh., has been appointed Resident Medical Officer of the Ticehurst Asylum, Sussex.

MANNERS, WILLIAM F., B.A. Cantab., M.R.C.S. Eng., has been appointed Medical Officer of the Pewsey District and of the Workhouse, Pewsey Union.

MUNDEN, CHARLES, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer of the No. 2 District of the Chard Union.

PALMER, J., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond., has been appointed Medical Officer of the Snodland 5th District of the Malling Union.

PERKINS, J. J., M.A., M.B. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Assistant Physician to the City of London Hospital for Diseases of the Chest.

STIRK, PERCY H., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Surgeon to the General Hospital, Henford, vice A. M. Watts, resigned.

STOKES, R. MCCLEAN, L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Monmouth District of the Monmouth Union.

VERDON, R. S., M.B., B.S. Camb., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Norfolk and Norwich Hospital, Norwich.

WOODHOUSE, WM., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer of the Vale District, Wantage Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN.—House Surgeon. Appointment for six months. Board, lodging, &c., provided.

BETHLEM HOSPITAL.—Two Resident Clinical Assistants for six months. Apartments, complete board, and washing provided.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with apartments and board.

BOROUGH OF GRAVESEND.—Medical Officer of Health. Salary £300.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, washing, lodging, &c.

CARLISLE DISPENSARY.—House Surgeon. Salary £130 per annum, with apartments (not board).

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, lodging, and washing.

COUNTY ASYLUM, Prestwich, Manchester.—Pathologist and Assistant Medical Officer. Salary £200 per annum, with board, residence, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for twelve months. Salary £80 per annum, with board, residence, and washing.

DUNDEE ROYAL INFIRMARY.—Medical Superintendent. Particulars as to duties and salary may be learned on application to the Secretary, D. Gordon Stewart, Solicitor, Dundee.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House Surgeon. Board, residence, &c., are provided, and an honorarium of £15 15s. at the completion of six months' approved service.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £50, with apartments and board.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W.—Junior Resident Medical Officer. Salary £50 per annum, with board, lodging, and washing.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £40 per annum, with board, lodging, and washing.

LINCOLN LUNATIC ASYLUM.—Assistant Medical Officer. Salary £5 a month, with board, lodging, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Board and lodging provided.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer. Salary £150 per annum, with board and residence.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—Dispensary Assistant Surgeon (non-resident). Twelve months' appointment. Salary £80.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—House Surgeon. Salary £100 per annum, with board and lodging.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer (unmarried). The appointment will be for six months and an honorarium of £12 will be granted for that time.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for a period of six months (renewable for a further similar period). Board, residence, and an honorarium of £10.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—Assistant House Surgeon. Salary £30 per annum, with board, lodging, and washing.

TOWNSHIP OF TOXTETH PARK.—Junior Assistant Resident Medical Officer of the Workhouse Infirmary. Salary £75 per annum, subject to a deduction under the Superannuation Statute, with board, washing, and apartments.

WEST HAM HOSPITAL, STRATFORD, E.—Junior House Surgeon. Board, washing, and residence in the hospital, with a salary of £35 per annum.

Births, Marriages, and Deaths.

BIRTHS.

BEALE.—On Aug. 23rd, at Clapham-road, S.W., the wife of Arthur A. Beale, M.B., of a daughter.

BIDWELL.—On Aug. 23rd, at Wimpole-street, Cavendish-square, W., the wife of Leonard A. Bidwell, F.R.C.S., of a son.

BLUCKE.—On Aug. 10th, at Bowbury, Donhead, Salisbury, the wife of Fredk. H. Blucke, M.R.C.S., L.R.C.P., of a son and daughter (twins).

CARRUTHERS.—On Aug. 16th, at Halton, Cheshire, the wife of W. Hodgson Carruthers, M.D., of a daughter.

COLDSTREAM.—On Aug. 13th, at Belford, Northumberland, the wife of George Probyn Coldstream, M.B., C.M., of a daughter.

DICKSON.—On Aug. 17th, at The Gables, Marlow, the wife of J. Dunbar Dickson, M.D., of a son.

DRAKE-BROCKMAN.—On Aug. 19th, at Mussoorie, North-West Provinces, India, the wife of Surgeon-Captain H. E. Drake-Brockman, Indian Medical Service, of a daughter.

EVELYN.—On Aug. 17th, at 24, Micklegate, York, the wife of W. A. Evelyn, M.D., of a son.

HEPBURN.—On Aug. 15th, at Marine-parade, South Lowestoft, the wife of Malcolm L. Hepburn, M.D., F.R.C.S., of twin girls (prematurely).

JONES.—On Aug. 19th, at Ty-mawr, Aberdare, the wife of E. J. Trevor Jones, L.R.C.P., M.R.C.S., of a son.

MORTON.—On Aug. 15th, at Bath-road, Wolverhampton, the wife of Edwin Morton, M.D., of a daughter.

MULLEN.—On Aug. 14th, at Ladywell Sanatorium, Eccles New-road, Salford, the wife of John W. Mullen, Medical Superintendent, of a daughter.

MURDOCH.—On Aug. 17th, at The Oaks, Hythe, Kent, the wife of Alan Murdoch, M.R.C.S., L.R.C.P., of a son.

SENIOR.—On Aug. 20th, at Hamilton Villa, Herne Bay, the wife of H. W. Senior, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

COLEMAN—SMITH.—At the parish church of Cannock (Staffs), on Aug. 12th, W. E. Coleman, M.R.C.S., of Wednesbury, to Florie E. Smith, of Cannock.

COWNIE—WORTON.—On Aug. 24th, at St. John's, Cardiff, Jas. F. Cownie, M.B., C.M. Edin., to Di Worton, third daughter of the late John Worton, Esq., J.P., of Blaenavon.

DE KORTE—OSBORNE.—On Aug. 10th, at Graaff Reinet, South Africa, Dr. W. E. De Korte, M.D., to Annie E. Osborne.

GIBSON—WATT.—At St. John's Wood Presbyterian Church, Marlborough-place, London, on July 26th, by the Rev. J. Monro Gibson, M.A., D.D. (father of the bridegroom), Henry N. Gibson, M.B., to Jane Grant, eldest daughter of A. P. Watt, 29, Abbey-road.

DEATHS.

BREACH.—On Aug. 19th, John Frederick Breach, L.R.C.S. and L.M. Edin., L.S.A. Lond., of Aston Upthorpe, Wallingford, Berks, aged 46.

DU PASQUIER.—On Aug. 20th, at Clifton House, Church-road, Upper Norwood, S.E., Claudius Francis Du Pasquier, F.R.C.S., formerly of 62, Pall Mall, late Surgeon-Apothecary to Her Majesty and late Surgeon-Apothecary to H.R.H. the Prince of Wales's Household, in his 86th year.

FULLER.—On July 26th, at South Vale, Upper Norwood, James Fuller, M.R.C.S., L.S.A., aged 77.

HOWDEN.—On Aug. 17th, at Sunnyside, Montrose, James Cunningham Howden, M.D.

HUMBLE.—On July 15th, at Viedma, Argentina, George Arthur Humble, M.D., for over 30 years Medical Missionary of the South American Mission, aged 66.

PILCHER.—On Aug. 16th, at Boston, Lincolnshire, William John Pilcher, F.R.C.S., aged 59.

SMITH.—On Aug. 13th, at Ostend, Katie, wife of E. Stanley Smith, M.D., of Kensington-gardens-square, and Stratford-place, and second daughter of the late Lieut.-Colonel H. M. Garstin. No cards.

TAYLOR.—On Aug. 13th, at his residence, The Hollies, Hathersage, Derbyshire, Joseph Henry Taylor, L.F.P.S. Glasg. and L.S.A., aged 76 years.

THOMPSON.—On Aug. 18th, at Lightburne, Ulverston, Lancs., Abram Thompson, M.D., Medical Officer of Health, Ulverston Urban and Rural and Grange-over-Sands Urban Districts, aged 60 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 26th, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
Aug. 20	29·71	S.W.	61	59	102	70	56	0·07	Overcast
,, 21	29·52	W.	66	60	120	75	60	...	Stormy
,, 22	29·63	W.	64	57	120	72	57	0·02	Cloudy
,, 23	29·74	W.	61	57	107	67	56	...	Cloudy
,, 24	29·62	SSW	63	59	103	67	57	0·40	Cloudy
,, 25	29·62	N.E.	60	58	107	68	56	0·06	Hazy
,, 26	29·76	S.W.	60	57	109	69	54	...	Fine

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1897, which was completed with the issue of June 26th, was given in THE LANCET of July 3rd. It is intended, in future, to include the Index and Title-page for each past half-yearly volume in the first number of the succeeding volume, as in the present case, instead of in the last number of the volume itself, as heretofore.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1897 are now ready. Bound in cloth, gilt lettered, price 13*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

DUPLICATE PERIODICALS.

THE Dundee Medical Library has on hand a number of duplicate volumes of the *Edinburgh Medical Journal, Medical Times and Gazette, Journal of Mental Science*, &c., which the committee is desirous of giving in exchange. Full particulars can be obtained on application to the Assistant Librarian, Medical Library, University College, Dundee.

Arytenoid.—We see no objection provided that the source of the degree be added after the letters signifying the same.

M.A.D. (Lowestoft).—We never prescribe in any way. Our correspondent must consult her own medical man.

AN OBJECTIONABLE ADVERTISEMENT.

IN our issue of Aug. 14th an advertisement was inserted which commenced "£25 down and £25 in a month." The advertisement was sent to our office accompanied by a covering letter in which the advertiser was described as "Dr. Young." It is obviously impossible to check the genuineness of every advertiser, although our clerks use every care. They can only take a person's description of himself as correct unless it is proved to be otherwise. We are sorry to find that "Dr. Young" is an irregular practitioner whose style and methods of practice may be judged from the following circular issued in his name:—

Read this Attentively.

When suffering from a disease or illness which others cannot cure,

CONSULT WITHOUT DELAY

the far famed and well tried experience of

MR. J. J. YOUNG

UNREGISTERED

CONSULTING PHYSICIAN AND SURGEON,

HIGH STREET, MIDSOMER NORTON,

SOMERSET,

PERSONALLY OR BY LETTER.

Who was legally apprenticed for 5 years in Ipswich, Suffolk, to one of the leading practitioners of the town, in the year 1840. Mr. Young also graduated at Oxford University, and duly walked the London Hospitals and passed through every ordeal of the profession with classical honours. Professor of the principles and practice of physic, the symptoms, causes and treatment of all diseases, from the period of birth to an advanced age, from a practical experience of upwards of 50 years.

For 25 years Mr. Young acted as general medical assistant, having had at intervals entire charge of some of the largest and best practices in England, Scotland and Wales.

The following are a few of the diseases which have claimed for him a reputation for the cure of which, as yet, he has had no rival:—

The Eye. The Ear. Gout. Rheumatism, Sciatica, Neuralgia, Wounds. Ulcers, Bad Legs, Sores, Skin Diseases, Lung and Chest Diseases. Cancerous affections of all kinds and all irregularities in respect to males and females from whatever cause,

which have baffled the skill and puzzled others of the profession.

Mr. Young has for years past associated with men of eminence in the consulting ranks of the profession, whose work makes the last part of the 19th century memorable in the history of medicine & Queen Victoria, and has prescribed for Princes, Lords, Dukes, and Noblemen. N.B.—but boasts proudly of the supreme honour and national pride of being indebted to the working classes, from which circle sprang his matchless and unlimited fame. Mr. Young was for upwards of 20 years in practice in Ipswich, Suffolk, where he left an undying fame for practical skill, recognised alike by the public and the profession at large.

HOURS OF ATTENDANCE—10 A.M. to 9 P.M.

CHARGES—In all cases will be most moderate and within the reach of all.

ADVICE GRATIS.

E. P. B. (Southampton).—The results of such an investigation would be most valuable. It would, however, require an enormous amount of work—house-to-house visiting and bacteriological examinations. We think that probably the best person to undertake such a task would be a "research scholar."

AN URGENT APPEAL.

To the Editors of THE LANCET.

SIRS,—May I crave a small space in THE LANCET for an appeal to the more successful members of our profession on behalf of the widow and eight children of the late Mr. Campe, a medical man practising in this neighbourhood, who died quite suddenly on Sunday last. The post-mortem examination showed extensive heart disease, which so sadly crippled his untiring efforts to support his wife and large family. They are, I regret to say, left absolutely unprovided for, and I earnestly entreat all who can to forward me a subscription, however small, which I will gratefully acknowledge (through your courtesy) in THE LANCET; especially do I desire to enlist the generous sympathy of members of his own school (Guy's).

I am, Sirs, yours faithfully,

WM. ASTLEY COOPER.

38, New-road, Rotherhithe, S.E., Aug. 25th, 1897.

HOSPITAL REFORM ASSOCIATION.

MR. T. GARRETT HORDER, the hon. secretary, has received a donation of ten guineas from Mr. William Allingham, F.R.C.S. Eng., towards the funds of the Association.

A. B.—The query of our correspondent is dealt with in Part XI. of the Lunacy Act, 1890. Section 315 (1) is as follows: "Every person who, except under the provisions of this Act, receives or detains a lunatic, or alleged lunatic, in an institution for lunatics, or for payment takes charge of, receives to board or lodge, or detains a lunatic or alleged lunatic in an unlicensed house, shall be guilty of a misdemeanour, and in the latter case shall also be liable to a penalty not exceeding fifty pounds." Apart from the question of legality we think that the circumstances of the case which our correspondent puts are such as cannot fail to be detrimental both to the individual referred to and to the other inmates. They are also highly prejudicial to the best interest of the cause which the institution professes to serve.

Cymric would be greatly obliged for any information as to the best books or tuition in London for the purpose of acquiring an elementary knowledge of the Welsh language.

Mr. C. E. Murphy.—The paragraph is certainly in execrable taste, but we are quite certain that the medical man alluded to objects more than anyone else to its insertion.

F. D. B.—We should say the fairest arrangement would be to divide the fee.

Dr. L. Kidd.—We do not consider the matter worth further notice.

"A QUERY IN OPHTHALMIC SURGERY."

To the Editors of THE LANCET.

SIRS,—I have waited for a more prominent ophthalmic surgeon than I am to answer the "Query in Ophthalmic Surgery" in THE LANCET of Aug. 7th. But as no answer has as yet appeared I, believing "X. Y. Z." to be anxious to hear the opinion of someone experienced in eye surgery, venture to give my advice for what it is worth. The question, Shall a cataract be removed from one eye while the sight of the other eye is perfect? has often been discussed. Though knowing that many medical men are inclined to give an answer in the negative, I would advise an operation in the case mentioned, because: (1) a cataract will make the condition of the afflicted eyeball the more amblyopic the longer it is allowed to remain; (2) should the as yet unaffected eye become similarly diseased the chances of success of operating may be less favourable than they are at present; (3) the cataract in the case mentioned is most probably of a soft, milky nature—cataracta Morgagniana—the removal of which by lance cut or needle discission (absorption) is a comparatively trifling operation; (4) even if the operation should be unsuccessful in restoring sight (amaurosis could be diagnosed previously to operation) the cosmetic advantage should be considered,—the patient being a young female; and (5) with the present "technique" in removing cataracts no anxiety in regard to a failure of the operation as such need be entertained. Should "X. Y. Z." remain still doubtful what to do he may leave the decision to the girl herself.

I am, Sirs, yours faithfully,

Grosvenor-street, W., Aug. 23rd, 1897. B. SCHWARZBACH, M.D.

Mr. Ed. E. Mayer.—The Royal College of Surgeons of England admit to the second, third, and final examinations candidates holding foreign diplomas, which entitle the holder to practise in the country where he obtained the diploma and which have been granted after education and examination equivalent to those required by the College. He would ascertain whether the College would so consider his degrees by specific inquiry of the Secretary of the College. There is a regular course of instruction at the National Hospital for the Paralysed and Epileptic, Queen-square. Particulars can be obtained by applying to the Secretary.

Mr. T. F. McDonnell.—The Infectious Diseases (Notification) Act only provides a fee of 1s. when a case is notified by a medical man which "occurs in his practice as medical officer of any public body." It is held that a Poor-law medical officer serving a board of guardians comes within that provision, and that he is only entitled to a fee of 1s.

L.S.A. Lond., L.M. Dub.—Judging by the statement before us B was right in going the first time, as it may have been a case of urgency. He should, however, have given up the case entirely to A, if, indeed, A chose to go on with it, and not have offered to see it "in conjunction" with A.

Mr. S. Gross.—Text-book of Chemical Physiology and Pathology, by W. D. Halliburton, M.D., B.Sc. Lond. (London: Longmans, Green, and Co.)

Mr. M. D. Rogers.—We regret that we are unable to assist our correspondent.

THE MANCHESTER MEDICAL GUILD.

WE have received the following letter, with a request for its publication, from the Secretary of the Manchester Medical Guild:—

[COPY.]

"Manchester, July 15th, 1897.

"DEAR SIR,—It has been reported to the Council of the Medical Guild that you have permitted yourself to become the instrument of a Medical Aid Association, which is promoting it objects against the unanimous opinion of the medical practitioners of the district, and I am requested to point out to you that such action on your part (without considering it as it affects your medical brethren) will, if persisted in, have a most baneful influence on your own future career. These associations are held in such evil repute by the profession that the medical journals will not knowingly insert their advertisements when they are in need of medical officers.

"No man can set at nought the opinion of his profession without injuring his own usefulness, and I venture to express the hope that you will see your way to retire from a position into which you may have been led unwittingly. Any doctor can make a living amongst a working-class population by conducting his practice in the time-honoured manner. I am assured he can do so from the very start, and every year his position becomes more secure; but it is not so with men who become the servants of organised laymen.

"Yours truly,

"ALEXANDER STEWART, Hon. Sec. the Medical Guild."

"THE CLIMATE OF CORSICA."

To the Editors of THE LANCET.

SIRS,—At page 235 of THE LANCET of July 24th I notice a query by "O. H." regarding the climate of Corsica, and have seen no reply given. If he will consult Section 7:6 of the *Medical Digest* he will be able to obtain all the information he requires, as therein are several references to the literature of this subject. I am, Sirs, obediently yours,

RICHARD NEALE, M.D. Lond.

Boundary-road, South Hampstead, Aug. 25th, 1897.

Professional Reader has omitted to enclose his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.).

THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.).

FRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (4th).—Royal Free (9 A.M. and 2 P.M.), Middlesex, (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received:—*Wrexham Advertiser, Leeds Mercury, The Aberdeen Weekly Free Press, Local Government Board Journal, Local Government Board Chronicle, Carmarthen Weekly Reporter, The Walsall Observer, Freeman's Exmouth Journal, Yorkshire Post, Reading Mercury, Midland Weekly Herald, Wellingborough News, The Malvern Advertiser, The Keighley News, The Alloa Advertiser, North Wales Guardian, Windsor and Eton Express, The Bristol Mercury, Montreal Weekly Gazette, The Lincoln, Rutland, and Stamford Mercury, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Dr. W. D Aubin, Jersey; Dr. A. L. Ashmead, New York; *Australian Trading World*, Lond., Editor of; Messrs. Allen and Hanburys, Lond.; Messrs. Armbrecht, Nelson, and Co., Lond.; Anderson's College, Glasgow, Secretary of; Mr. W. B. Alderson, Lond.

B.—Dr. G. P. Bate, Bethnal Green; Surg.-Capt. W. J. Buchanan, Bhagalpur, India; Mr. N. F. Bunshaw, Ghadechi, India; Mr. D. N. Boutagy, Jaffa, Palestine; Messrs. Burgoyne, Burbidges, and Co., Lond.; Miss E. F. Boultbee, Lond.; Messrs. A. Bishop and Sons, Lond.; Messrs. Banks and Co., Bolton; Messrs. Blondeau et Cie, Lond; Mr. A. D. Brash, Lond; Messrs. Billows and Co., Keighley; Mr. C. Birchall, Liverpool; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Baillière, Tindall, and Cox, Lond.; Messrs. Brady and Martin, Newcastle-on-Tyne.

C.—Dr. W. B. Clarke, Lond.; Mr. W. W. S. Corry, Pickering; Cortland Wagon Co., Lond.; Messrs. Crossley, Moir, and Co., Lond.; Carlisle Dispensary, Hon. Secretary of; Central London Throat and Ear Hospital, Lond., Secretary of; County Asylum, Prestwich, Secretary of; Messrs. J. and A. Churchill, Lond.; Chelsea Hospital for Women, Secretary of.

D.—Mr. J. R. Dundas, Lond.; Mr. H. H. Dodwell, Lond.; Dr. F. J. Drake, Launceston, N Z; Dr. Kedarnath Das, Calcutta; Mr. H. Downes, Burnham; Dr. A. S. Dick, Lond.; Dr. F. H. Decker, Dover, N.J., U.S.A.

E.—Messrs. Eason and Son, Dublin.

F.—Messrs. J. S. Fry and Sons, Bristol.

G.—Mr. S. Gross, Lond.; Dr. J. Gilroy, Ecclefechan; Dr. G. Gresswell, Louth; G. P., Lond.; General Post Office, Lond., Secretary of.

H.—Mr. W. J. Harris, Lond.; Mr. T. Garrett Horder, Cardiff; Dr. M. C. Hime, Donegal; Staff-Surg. W. E. Home, Lond.; Mr. A. Hind, East Finchley; Hospital for Diseases of the Throat, Lond., Secretary of; Messrs. Hodder and Stoughton, Lond.; Messrs. C. J. Hewlett and Son, Lond.; Mr. G. Hermanni, jun., Lond.; Huddersfield Infirmary, Secretary of.

I.—Dr. E. Fletcher Ingals, Chicago; International Intelligence Bureau, Lond., Directors of.

J.—Mr. F. T. Jackson, Ulverston.

K.—Surg. R. A. Kirby, Portsea; Messrs. Krohne and Sesemann, Lond.; Messrs. Knoll and Co., Ludwigshafen; Mr. B. Kühn, Lond; Messrs. H. and T. Kirby and Co., Lond.

L.—Messrs. A. W. Latham and Co, Lond.; Messrs. Lee and Nightingale, Liverpool; *Les Annales d'Oculistique*, Paris, Director of; Linotype Co, Lond.; Mr. A. Longman, Salisbury.

M.—Dr G. H. Milnes, Derby; Dr. H. O. Marey, Boston, U.S.A.; Middlesex Hospital, Lond., Secretary of; Maltine Manufacturing Co, Lond.; Messrs. Moser and Sons, Kendal; Messrs. Mather and Crowther, Lond.; Manchester Children's Hospital, Pendlebury, Lady Superintendent of; Mr. L. P. Mark, Lond.; Dr. Macnaughton Jones, Lond.

P.—Mr. D'Arcy Power, Lond.; Miss F. Emily Phillips, Putney; Messrs. Parke, Davis, and Co., Lond.; Princeps, Lond.

Q.—Queen's Faculty of Medicine, Birmingham, Secretary of.

R.—Mr. C. Roebuck, Huddersfield; Royal South Hants Infirmary, Southampton, Secretary of; Mr. A. J. Riddett, Lond., Dr. T. G. Roddick, Montreal; Mr. C. Reidy, Cardiff; Dr. J. E. Rhodes, Chicago; Messrs. Reynolds and Branson, Leeds; Or. J. C. Renton, Glasgow; Royal Aquarium, Lond., Manager of.

S.—Mr. G. Slater, Sheffield; Mr. T. Smith, Lond.; Messrs. Street and Co., Lond.; Dr. D. Sime, Lond.; Dr. F. M. Sandwith, Cairo; Stafford Infirmary, House Surgeon of; St. Mungo's College, Glasgow, Secretary of; South Devon and East Cornwall Hospital, Plymouth, Hon. Secretary of; Messrs. A. G. Spalding and Bros., Lond.; Mr. A. Sykes, Huddersfield; Mr. Noble Smith, Lond.

T.—Mr. Lawson Tait, Birmingham; Mr. S. J. Thomson, Lucknow; Mr. J. Tyson, Philadelphia, U.S.A; Tutor, Lond.; Dr. M. Thomas, Llanfair; Mr. W. Thorburn, Manchester.

W.—Dr. J. K. Watson, Lond.; Messrs. Wyckoff, Seamans, and Benedict, Lond.; Messrs. Wright, Dain, Peyton, and Co., Birmingham; Wigmore Nurses' Institution, Lond.; Weymouth Urban District, Medical Officer of; Dr. F. Kenneth Wilson, Lond.; Messrs. W. M. Wills and Co., Lond.; Mrs. Wiseman, Lond.; Messrs. Wyleys, Birmingham; West Riding, Lond.; Dr. W. Hale White, Lond.

Z.—Zomela Co., Birmingham.

Letters, each with enclosure, are also acknowledged from—

A.—Adelphi, Lond.; A. B. C., Lond.

B.—Mr. R. Barrett, Liverpool; Messrs. J. J. Burnett and Sons, Southampton; Mr. F. W. Beville, Lond.; Bromley, St. Leonards-road (151); B., Southport; Bristol Royal Infirmary, Secretary of; Mrs. L. Breach, Aston, Upthorpe; Mr. T. H. Brocklehurst, Kinson; Mr. W. S. Battiss, Chester; Mr. W. Bowes, Aldington; Mr. W. Byford, Chesterfield; Dr. J. L. Bond, Ukiah City, U.S.A; Mr L. Bostock, Huddersfield; Beta, Lond.; Miss L. Bennett, Lond.

C.—Mr. W. E. Coleman, Tenby; Dr. W. H. Carruthers, Halton; Mr. F. Cavers, Newcastle-on-Tyne; Messrs S. B. Clark and Son, Lond.; Dr J. F. Cownie, Cardiff; Mr. W. V. Cane, Nagpur, India; Messrs. Cassell and Co., Lond.; Christian, Lond.; Charta, Lond.; Mr. P. A. Colmer, Yeovil; C., Sheffield; Crystalline, Lond.; Chronos, Lond.; Surg.-Major J. Clarke, Dalhousie; Mr. J. W. Carruthers, Lond.

D.—Mr. S. G. Denton, Lond; Dorset, Lond.; Delta, Bristol; Mr. H. H. Dodds, Boston.

E.—Dr. W. A. Evelyn, York; Edina, Lond.

F.—Mr. J. J. Fanning, Wilton; Fitz, Lond.; Mr. G. Foy, Dublin; Mr. E. A. Ford, St. Briavel's Castle; Fromm's Extract Co., Lond.; F. W. H., Lond.

G.—G. E. D, Lond.; Mr. A. B. Griffiths, Lond.; Genuine, Lond.; G. S., Lond; Greer, Blofield; Messrs. R. W. Greeff and Co., Lond.; Mr. W. C. Gent, Bristol; Messrs. H. Garnett and Co., Rotherham; Surg. H. W. G. Greene, Esquimalt.

H.—Mr. P. Hayes, Bury; Messrs. Hughes and Harber, Longton; Mr. T. F. Hale, Barrow Hill; Hamilton Association, Lond.; Mr. J. Heywood, Manchester; Mr. F. S. Hall, Southampton; Hills, Lond.; Miss Homersham, Canterbury; Mr. W. Heap, Liscard; Dr. M. C. Hime, Buncrana.

I.—Dr. R. N. Ingle, Palling by-the-Sea; Ipecac, Lond.; Messrs. Ingram and Royle, Lond.; Isis, Lond.

J.—Mr. J. M. Jones, Alresford; Jenner Institue for Calf Lymph, Secretary of; J. M., Hampton Hill; Junior, Lond; Dr. H. J. Jones, Horsham; *Janus*, Gerolstein, Redaction of.

K.—Mr. C. P. Kelly, Navan; Mr. W. Kuhlenthal (Rio Chemical Co.), Lond.; Kent, Lond.; Mr. R. C. B. Kerin, Culham; K. P., Lond.; Dr. J. L. Kerr, Crawshawbooth; Messrs. C. Kinlock and Co., Lond.; Miss Kennedy, Ballymoney; Messrs. G. Kerry and Son, Lond.; Mr. A. C. Kemble, Godalming.

L.—Surg. G. Ley, Bermuda; Leeds Hospital for Women and Children, Secretary of; L. M., Lond; Mr. H. B. Long, Burwell; Mr. W. W. Leigh, Trehafris; Levis, Lond.

M.—Mr. J. Marsden, Blackpool; Monkwearmouth and Southwark Hospital, Sunderland, Treasurer of; Malt, Lond; Mr. S. Mackey, Hodnet; Miss Marriott, Southport; Dr. A. H. Montfort, Cleobury Mortimer; Messrs. Milton and Co., Lond; Messrs. Macduff and Co, Lond; Mr. J. MacArthur, Redhill; Mr. R. H. Mills-Roberts, Llanberis; M. R., Lond.; Mr. E. Muspratt, Gainsborough; M. O. H., Lond.; Dr. Moncur, Bishop's Castle; Menai, Lond.; Mr. H. Marmion, Edinburgh; Messrs. Maltop and Co., Lond.; M., Lond.; Medicus, Lond.

N.—Nicholas, Lond.

O.—Mr. C. A. P. Osburne, Norwich; Odifex, Lond.; Mr. F. Owens, Kington; Mr. F. Orchard, Lond.

P.—Mr. J. L. Pinchin, Leytonstone; Mr. H. Powell, Nenagh; Mr J. T. Pawlett, Wymondham; Pharmaceutical Society of Great Britain, Edinburgh, Assistant Secretary of; Dr. J. F. Porter, Helmsley; Peritus, Lond.; P. G., Lond.

Q.—Quintus, Lond.; Quadrant, Lond.

R.—Mr. R. Roberts, Llanddeusant; Mr. A. Reichwald, Lond.; Rita, Lond.; Rest, Ilfracombe; Messrs. Rivington and Co., Lond.; Dr. A. Richardson, Aberlour; Dr. R., Frensham.

S.—Dr. Spicer, Lond; Capt. M. J. Sweetman, Dover; Staffordshire General Infirmary, Secretary of; Dr. C. E. Soulby, Grimsby; Statim, Lond.; Surg.-Major C. Seymour, West Brighton; Mr. P. W. Shepherd, Leeds; Messrs. A. F. Sharp and Co., Glasgow; Surgeon, Kettering; Mr G. Sharp, Leeds; Dr. T. M. Scott, Burnley; Scabbard, Lond.; Mr E. Simpson, Epperstone; Mr. H. M. Speechly, Farkgate.

T.—Mr. F. Tyrrell, Ramsgate; Thresh's Disinfector Co., Chelmsford, Secretary of; Dr. A. G. A. Thomson, Millbrook; Mrs. C. M. Thompson, Workington.

U.—Mr. J. B. Unwin, Dunchurch.

V.—Surg. A. H. H. Vizard, H.M.S. *Crescent*, Halifax, N.S.; Veritas, Lond.; Verax, Lond.; Volens, Lond.

W.—Mr. D. O. Williams, Glandovey; W., Lond.; Mr. J. C. Webb, Liverpool; Mr. H. Webster-Jones, Munich; Mr. W. Walker, Greenock.

X.—X Y., Manchester.

Y.—Yorkshire, Lond.

Z.—Zeta, Lond.; Z., Lond.

EVERY FRIDAY.

THE LANCET.

PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0 5 0
Official and General announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements	Ditto	0 4 6
	Every additional Line	0 0 6

Quarter Page, £1 10 0. Half a Page, £2 15 0. An Entire Page, £5 5 0.

Terms for Position Pages and Serial Insertions on application

An original and novel feature of "THE LANCET General Advertiser" is a special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to Mr. CHARLES GOOD, Manager, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 8, Rue Traversière, Asnières, Paris.